Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82A (07-13)
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# TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

| | |
|---|---|
| Application Number | Unassigned |
| Filing Date | Herewith |
| First Named Inventor | Lawrence Kates |
| Title | Wireless Sensor Unit Communication Triggering and Management |
| Art Unit | Unassigned |
| Examiner Name | Unassigned |
| Attorney Docket Number | 563800USCON11 |

**SIGNATURE of Applicant or Patent Practitioner**

| | | | |
|---|---|---|---|
| Signature | /Matthew Johnson/ | Date (Optional) | April 4, 2016 |
| Name | Matthew Johnson | Registration Number | 72299 |
| Title (if Applicant is a juristic entity) | Agent of Record | | |
| Applicant Name (if Applicant is a juristic entity) | Google Inc. | | |

**NOTE:** This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

☑ *Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

Doc Code: PA..
Document Description: Power of Attorney

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# POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

| Application Number | Filing Date |
|---|---|
| | |

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☑ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above: 124746

OR

☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

**Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:**

☑ The address associated with the above-mentioned Customer Number

OR

☐ The address associated with Customer Number:

OR

| | | | | | |
|---|---|---|---|---|---|
| Firm or Individual Name | | | | | |
| Address | | | | | |
| City | | State | | Zip | |
| Country | | | | | |
| Telephone | | Email | | | |

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

Google Inc.

☐ Inventor or Joint Inventor (title not required below)

☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)

☑ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)

☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

Legal Dept TSH Google

**SIGNATURE of Applicant for Patent**

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

| | | | |
|---|---|---|---|
| Signature | /Allen Lo/ | Date (Optional) | Nov. 24, 2014 |
| Name | Allen Lo | | |
| Title | Assistant Secretary & Deputy General Counsel of Google Inc. | | |

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☑ Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

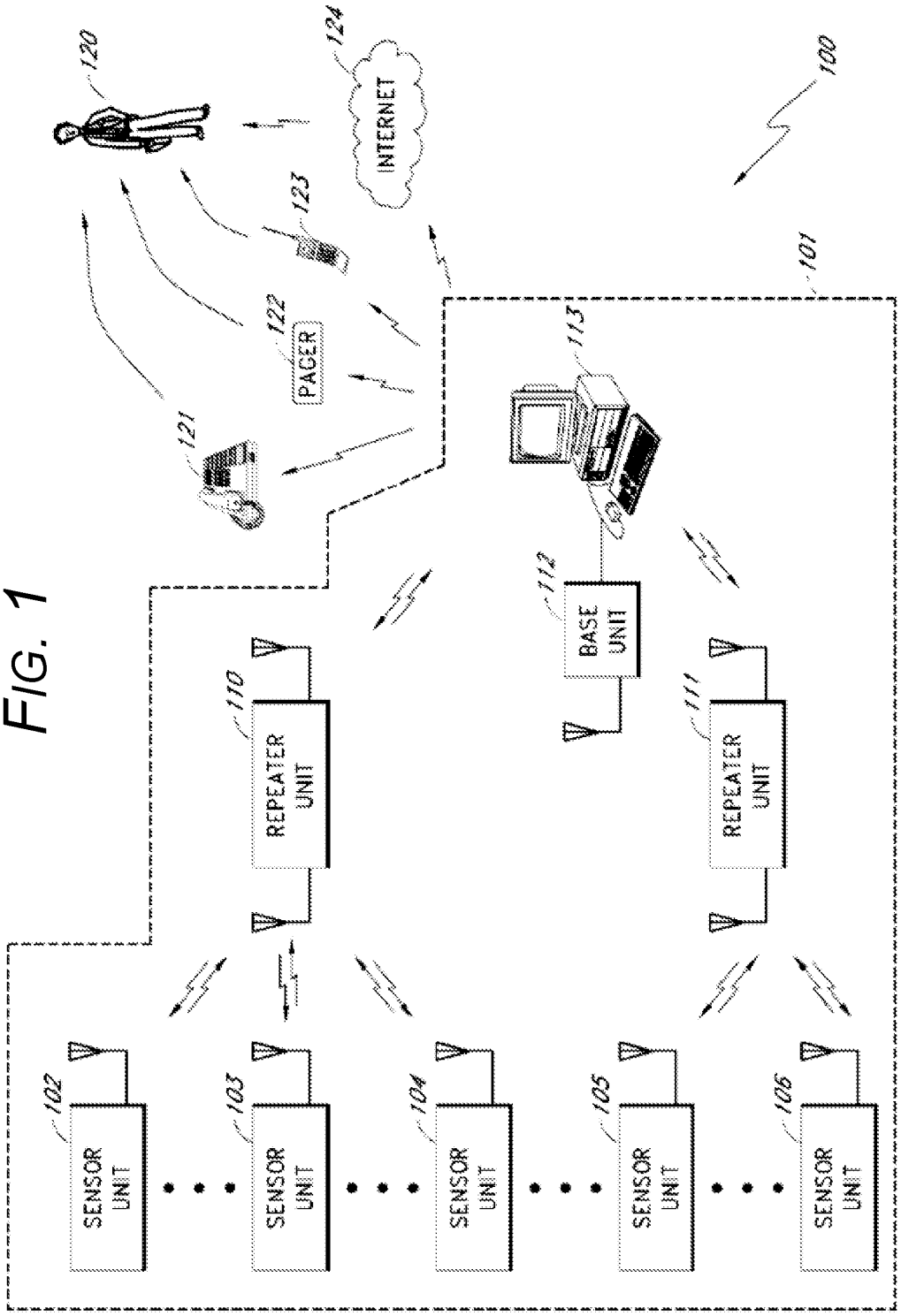
120
124
INTERNET
100
123
101
122
PAGER
113
121
112
BASE UNIT
110
REPEATER UNIT
111
REPEATER UNIT
102
SENSOR UNIT
103
SENSOR UNIT
104
SENSOR UNIT
105
SENSOR UNIT
106
SENSOR UNIT

FIG. 1

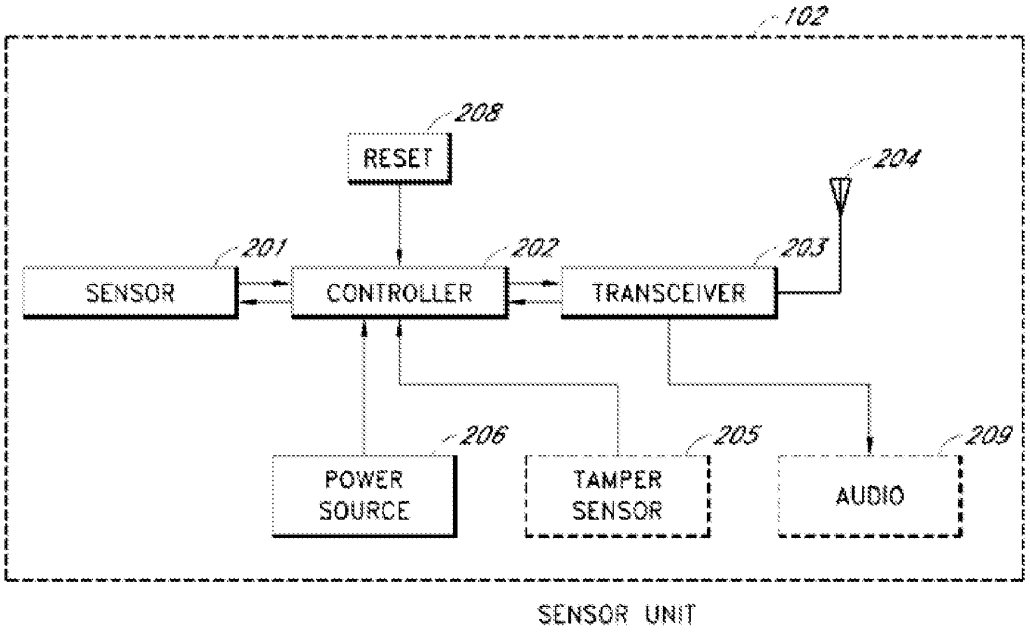
102
208
RESET
204
201
202
203
SENSOR
CONTROLLER
TRANSCEIVER
206
205
209
POWER SOURCE
TAMPER SENSOR
AUDIO
SENSOR UNIT

FIG. 2

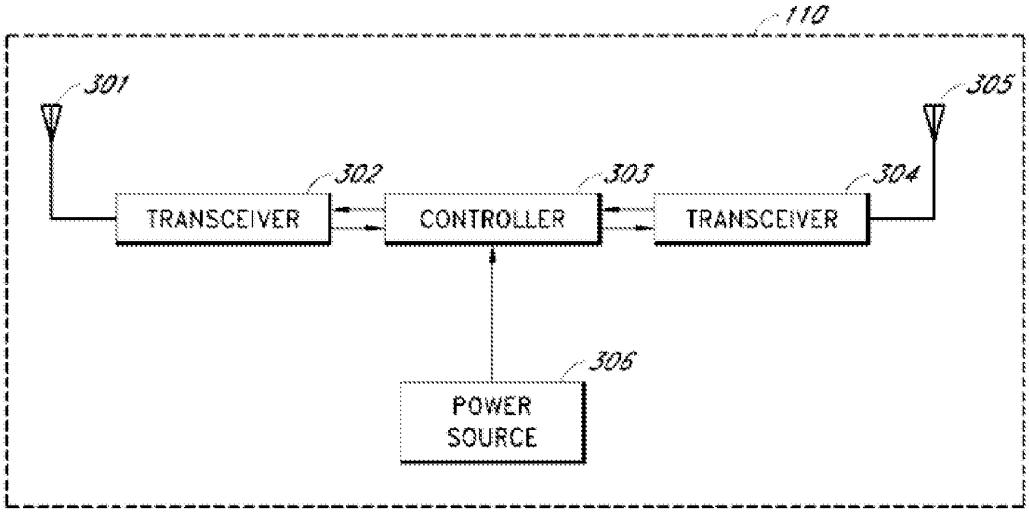
110
301
305
302
303
304
TRANSCEIVER
CONTROLLER
TRANSCEIVER
306
POWER SOURCE

FIG. 3

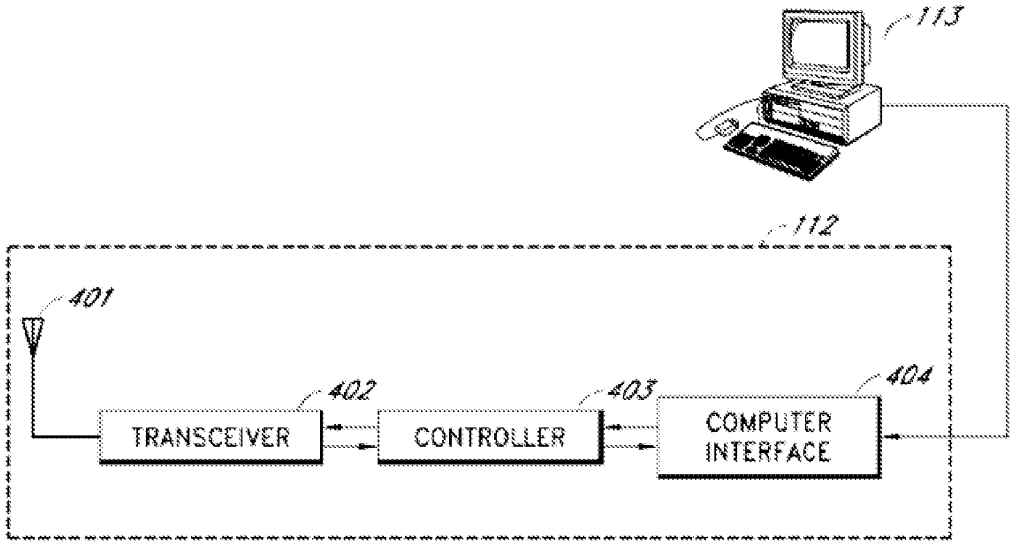
113
112
401
402
403
404
TRANSCEIVER
CONTROLLER
COMPUTER INTERFACE

FIG. 4

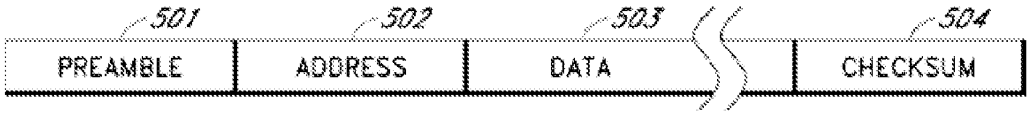
501
502
503
504
PREAMBLE
ADDRESS
DATA
CHECKSUM

FIG. 5

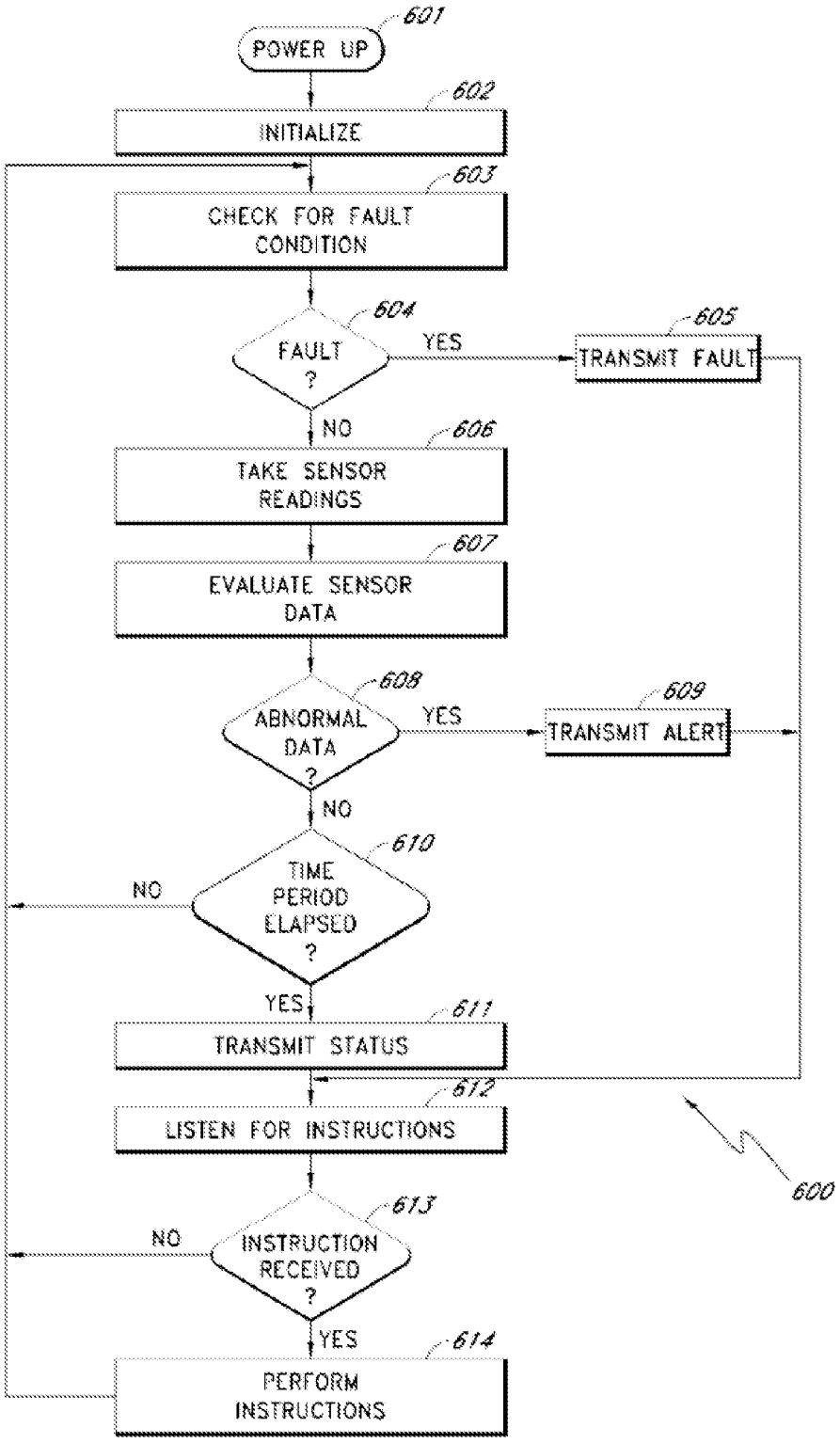
601
POWER UP
602
INITIALIZE
603
CHECK FOR FAULT CONDITION
604
FAULT ?
YES
605
TRANSMIT FAULT
NO
606
TAKE SENSOR READINGS
607
EVALUATE SENSOR DATA
608
ABNORMAL DATA ?
YES
609
TRANSMIT ALERT
NO
610
TIME PERIOD ELAPSED ?
NO
YES
611
TRANSMIT STATUS
612
LISTEN FOR INSTRUCTIONS
600
613
INSTRUCTION RECEIVED ?
NO
YES
614
PERFORM INSTRUCTIONS

FIG. 6

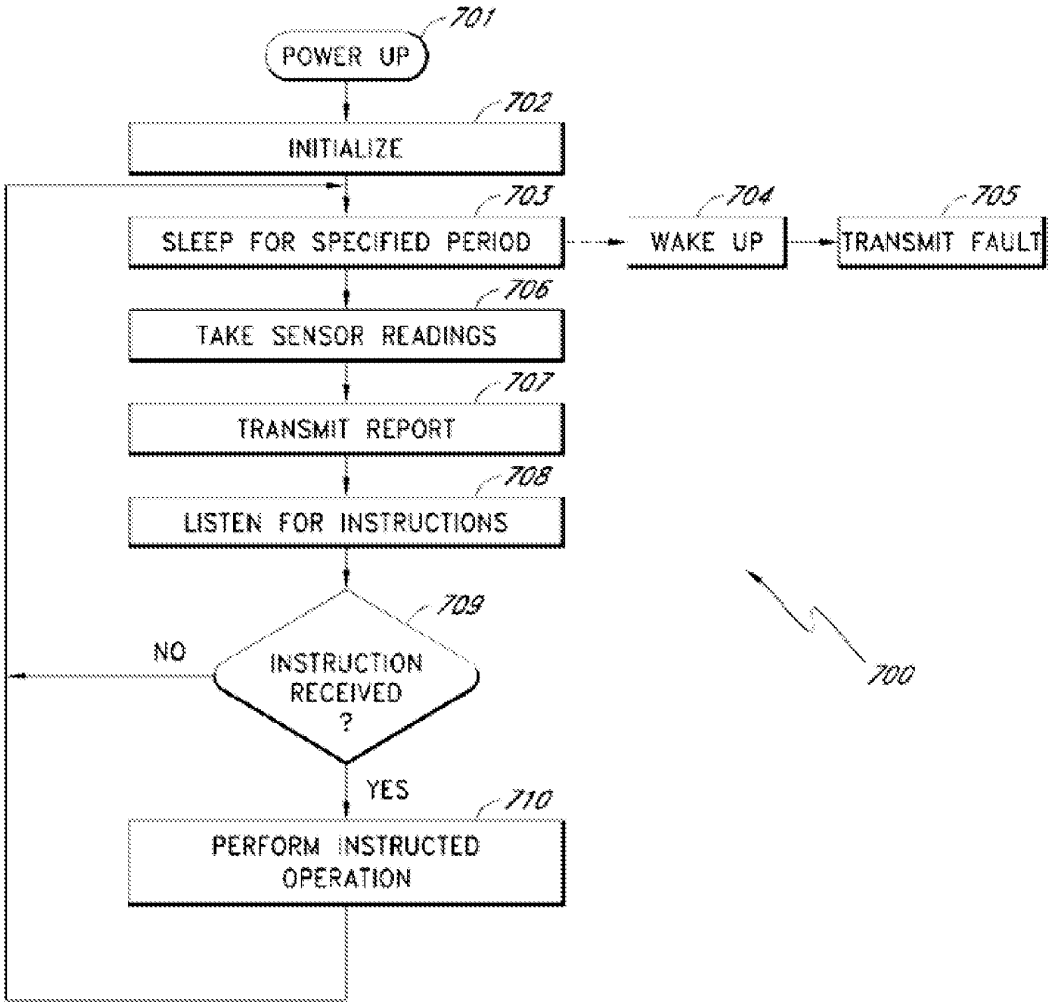
701
POWER UP
702
INITIALIZE
703
SLEEP FOR SPECIFIED PERIOD
704
WAKE UP
705
TRANSMIT FAULT
706
TAKE SENSOR READINGS
707
TRANSMIT REPORT
708
LISTEN FOR INSTRUCTIONS
709
INSTRUCTION RECEIVED ?
NO
YES
710
PERFORM INSTRUCTED OPERATION
700

FIG. 7

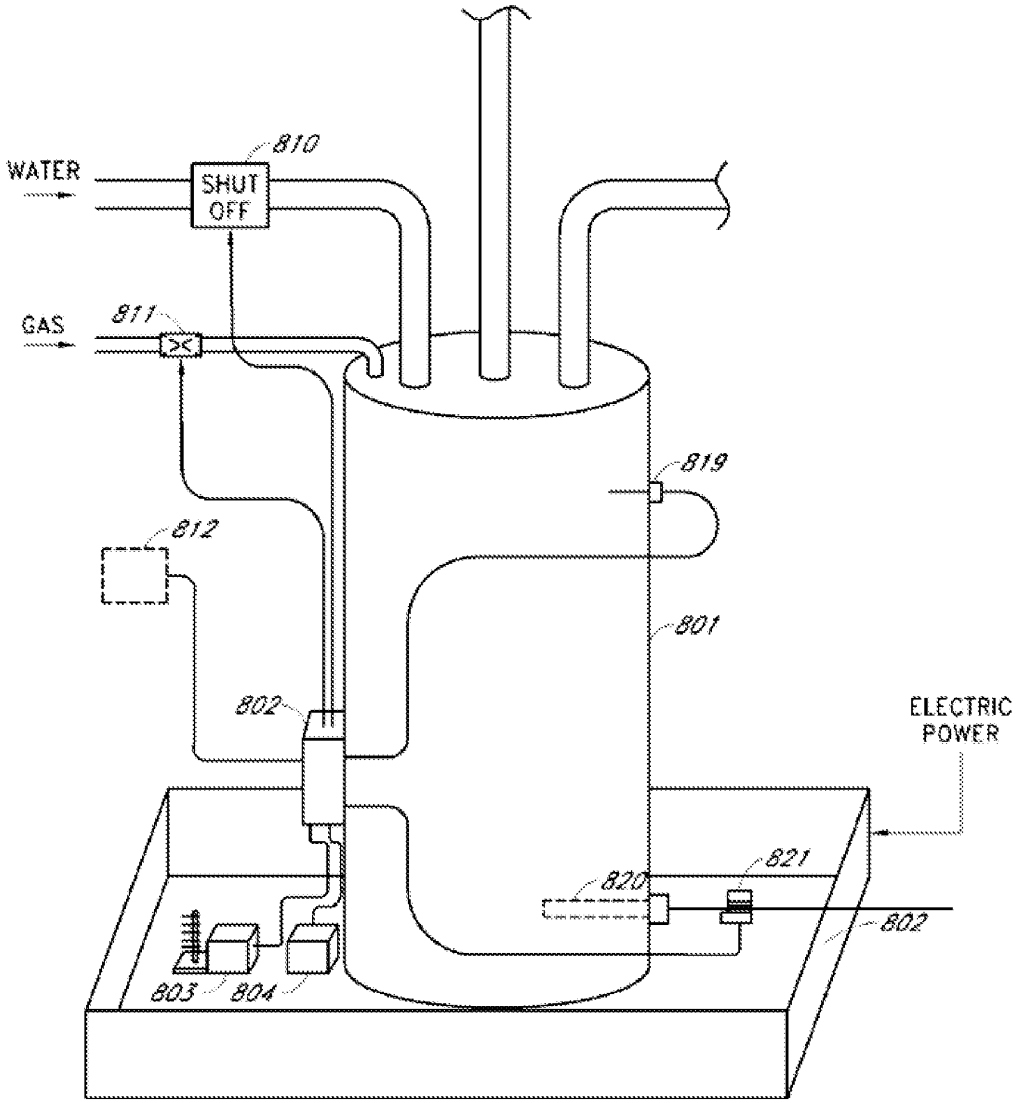
WATER
SHUT OFF
810
GAS
811
812
819
801
802
ELECTRIC POWER
821
820
802
803
804

FIG. 8

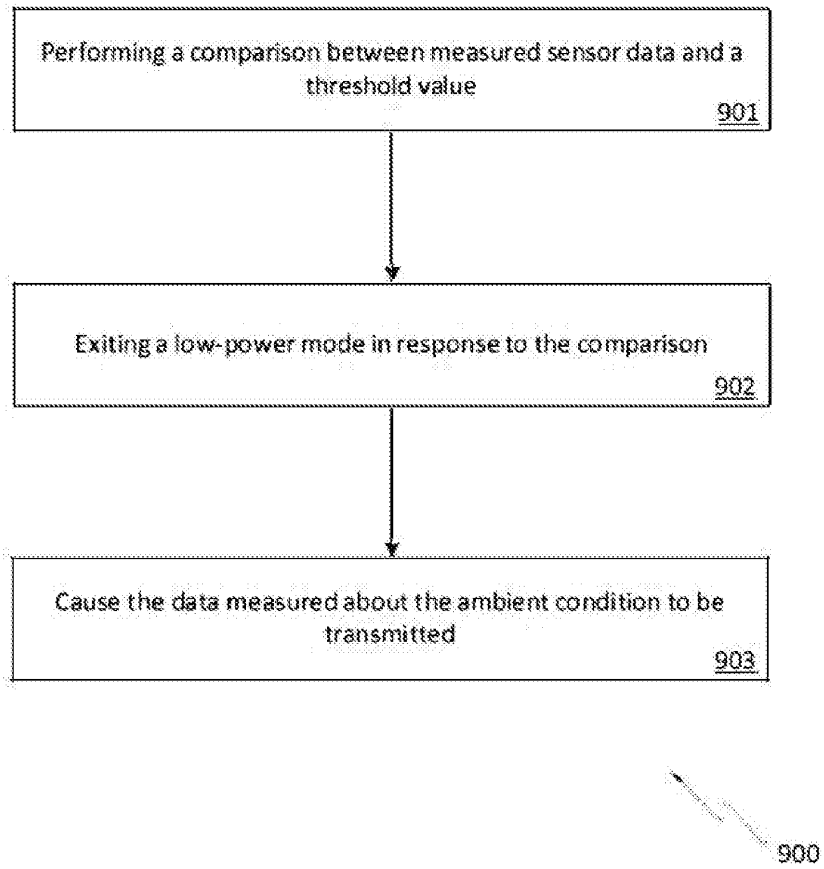
Performing a comparison between measured sensor data and a threshold value
901
Exiting a low-power mode in response to the comparison
902
Cause the data measured about the ambient condition to be transmitted
903
900

FIG. 9

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# DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

| Title of Invention | WIRELESS TRANSCEIVER |
|---|---|

As the below named inventor, I hereby declare that:

This declaration is directed to: ☐ The attached application, or

☒ United States application or PCT international application number 14/168,870

filed on January 30, 2014.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

## WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Lawrence Kates Date (Optional): _____

Signature: _____

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

PTO/AIA/14 (11-15)
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| Application Data Sheet 37 CFR 1.76 | Attorney Docket Number | 563800USCON11 |
|---|---|---|
| | Application Number | |
| Title of Invention | Wireless Sensor Unit Communication Triggering and Management | |

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

## Secrecy Order 37 CFR 5.2:

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

## Inventor Information:

**Inventor** 1 — Remove

**Legal Name**

| Prefix | Given Name | Middle Name | Family Name | Suffix |
|---|---|---|---|---|
| | Lawrence | | Kates | |

**Residence Information (Select One)** ● US Residency  Non US Residency  Active US Military Service

| City | State/Province | Country of Residence |
|---|---|---|
| Corona Del Mar | CA | US |

**Mailing Address of Inventor:**

| | |
|---|---|
| **Address 1** | c/o Google Inc. |
| **Address 2** | 1600 Amphitheatre Parkway |

| City | State/Province | Postal Code | Country |
|---|---|---|---|
| Mountain View | CA | 94043 | US |

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

## Correspondence Information:

**Enter either Customer Number or complete the Correspondence Information section below.**
**For further information see 37 CFR 1.33(a).**

☐ **An Address is being provided for the correspondence Information of this application.**

| | | | |
|---|---|---|---|
| **Customer Number** | 124746 | | |
| **Email Address** | docket@sbmc-law.com | Add Email | Remove Email |

## Application Information:

| | | | |
|---|---|---|---|
| **Title of the Invention** | Wireless Sensor Unit Communication Triggering and Management | | |
| **Attorney Docket Number** | 563800USCON11 | **Small Entity Status Claimed** | ☐ |
| **Application Type** | Nonprovisional | | |
| **Subject Matter** | Utility | | |
| **Total Number of Drawing Sheets (if any)** | 7 | **Suggested Figure for Publication (if any)** | 1 |

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| Application Data Sheet 37 CFR 1.76 | Attorney Docket Number | 563800USCON11 |
|---|---|---|
| | Application Number | |
| Title of Invention | Wireless Sensor Unit Communication Triggering and Management | |

## Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

| Application number of the previously filed application | Filing date (YYYY-MM-DD) | Intellectual Property Authority or Country |
|---|---|---|
| | | |

## Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

## Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

| Please Select One: | ● Customer Number | US Patent Practitioner | ○ Limited Recognition (37 CFR 11.9) |
|---|---|---|---|
| Customer Number | | | |

## Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.
When referring to the current application, please leave the "Application Number" field blank.

| Prior Application Status | Pending | | Remove |
|---|---|---|---|
| Application Number | Continuity Type | Prior Application Number | Filing or 371(c) Date (YYYY-MM-DD) |
| | Continuation of | 14548137 | 2014-11-19 |

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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE


| Application Data Sheet 37 CFR 1.76 | Attorney Docket Number | 563800USCON11 |
|---|---|---|
| | Application Number | |
| Title of Invention | Wireless Sensor Unit Communication Triggering and Management | |

| Prior Application Status | Pending | | | Remove |
|---|---|---|---|---|
| Application Number | Continuity Type | Prior Application Number | Filing or 371(c) Date (YYYY-MM-DD) | |
| 14548137 | Continuation of | 14168876 | 2014-01-30 | |
| Prior Application Status | Abandoned | | | Remove |
| Application Number | Continuity Type | Prior Application Number | Filing or 371(c) Date (YYYY-MM-DD) | |
| 14168876 | Continuation of | 12905248 | 2010-10-15 | |
| Prior Application Status | Patented | | | Remove |

| Application Number | Continuity Type | Prior Application Number | Filing Date (YYYY-MM-DD) | Patent Number | Issue Date (YYYY-MM-DD) |
|---|---|---|---|---|---|
| 12905248 | Continuation of | 12482079 | 2008-07-29 | 7817031 | 2010-10-19 |

| Prior Application Status | Patented | | | Remove |
|---|---|---|---|---|

| Application Number | Continuity Type | Prior Application Number | Filing Date (YYYY-MM-DD) | Patent Number | Issue Date (YYYY-MM-DD) |
|---|---|---|---|---|---|
| 12482079 | Division of | 11562313 | 2006-11-21 | 7411494 | 2008-08-12 |

| Prior Application Status | Patented | | | Remove |
|---|---|---|---|---|

| Application Number | Continuity Type | Prior Application Number | Filing Date (YYYY-MM-DD) | Patent Number | Issue Date (YYYY-MM-DD) |
|---|---|---|---|---|---|
| 11562313 | Continuation of | 10856231 | 2004-05-27 | 7142107 | 2006-11-28 |

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button. Add

## Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)[i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Remove

| Application Number | Country[i] | Filing Date (YYYY-MM-DD) | Access Code[i] (if applicable) |
|---|---|---|---|
| | | | |

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button. Add

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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE


| Application Data Sheet 37 CFR 1.76 | | Attorney Docket Number | 563800USCON11 |
|---|---|---|---|
| | | Application Number | |
| Title of Invention | Wireless Sensor Unit Communication Triggering and Management | | |

## Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☒ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

PTO/AIA/14 (11-15)
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| Application Data Sheet 37 CFR 1.76 | Attorney Docket Number | 563800USCON11 |
|---|---|---|
| | Application Number | |
| Title of Invention | Wireless Sensor Unit Communication Triggering and Management | |

## Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

**NOTE**: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

**1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)**

**A. Priority Document Exchange (PDX)** - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

**B. Search Results from U.S. Application to EPO** - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

**2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)**

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

**NOTE:** Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

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| Application Data Sheet 37 CFR 1.76 | Attorney Docket Number | 563800USCON11 |
|---|---|---|
| | Application Number | |
| Title of Invention | Wireless Sensor Unit Communication Triggering and Management | |

## Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

**Applicant 1** Remove

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| | |
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| | | | |
|---|---|---|---|
| **Address 1** | 1600 Amphitheatre Parkway | | |
| Address 2 | | | |
| **City** | Mountain View | **State/Province** | CA |
| **Country** | US | Postal Code | 94043 |
| Phone Number | | Fax Number | |
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| Application Data Sheet 37 CFR 1.76 | Attorney Docket Number | 563800USCON11 |
|---|---|---|
| | Application Number | |
| Title of Invention | Wireless Sensor Unit Communication Triggering and Management | |

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| **Application Data Sheet 37 CFR 1.76** | Attorney Docket Number | 563800USCON11 |
|---|---|---|
| | Application Number | |
| Title of Invention | Wireless Sensor Unit Communication Triggering and Management | |

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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| **Application Number:** | |
| **Filing Date:** | |
| **Title of Invention:** | Wireless Sensor Unit Communication Triggering and Management |
| **First Named Inventor/Applicant Name:** | Lawrence Kates |
| **Filer:** | William Breen/Whitney Soule |
| **Attorney Docket Number:** | 563800USCON11 |

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**Filing Fees for Utility under 35 USC 111(a)**

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| Utility application filing | 1011 | 1 | 280 | 280 |
| Utility Search Fee | 1111 | 1 | 600 | 600 |
| Utility Examination Fee | 1311 | 1 | 720 | 720 |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |

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| **Post-Allowance-and-Post-Issuance:** | | | | |
| **Extension-of-Time:** | | | | |
| **Miscellaneous:** | | | | |
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| Electronic Acknowledgement Receipt | |
|---|---|
| **EFS ID:** | 25402499 |
| **Application Number:** | 15090973 |
| **International Application Number:** | |
| **Confirmation Number:** | 5338 |
| **Title of Invention:** | Wireless Sensor Unit Communication Triggering and Management |
| **First Named Inventor/Applicant Name:** | Lawrence Kates |
| **Customer Number:** | 124746 |
| **Filer:** | William Breen/Whitney Soule |
| **Filer Authorized By:** | William Breen |
| **Attorney Docket Number:** | 563800USCON11 |
| **Receipt Date:** | 05-APR-2016 |
| **Filing Date:** | |
| **Time Stamp:** | 14:53:57 |
| **Application Type:** | Utility under 35 USC 111(a) |

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| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | | 563800USCON11_Application.pdf | 193633<br>97d250a844052e5c62098f8a844cff46d2cd8de1 | yes | 29 |
| | **Multipart Description/PDF files in .zip description** | | | | |
| | **Document Description** | | **Start** | **End** | |
| | Specification | | 1 | 23 | |
| | Claims | | 24 | 28 | |
| | Abstract | | 29 | 29 | |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | Power of Attorney | 563800USCON11_POA.pdf | 272551<br>a3683aaa254c8448b8976bd7c36050eb47ad5857 | no | 2 |
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| 4 | Oath or Declaration filed | 563800USCON11_Executed_Declaration.pdf | 94893<br>7bf72f8d5626fa9fdef8a5fa6b7a1951ed6fe86f | no | 1 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 5 | Application Data Sheet | 563800USCON11_AppDataSheet.pdf | 1823413<br>0a52d5cda09923f06f4794acfe76d3d7049baba3 | no | 9 |
| **Warnings:** | | | | | |
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| 6 | Fee Worksheet (SB06) | fee-info.pdf | 34774<br>eb5a15f555d6964a25329b2ab8d2491a3ec4f720 | no | 2 |
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# WIRELESS SENSOR UNIT COMMUNICATION TRIGGERING AND MANAGEMENT

**Inventor**
Lawrence Kates

## CROSS-REFERENCE TO RELATED APPLICATIONS

**[0001]** This application is a continuation of U.S. Patent Application Ser. No. 14/548,137, filed November 19, 2014, and entitled, "WIRELESS SENSOR UNIT COMMUNICATION TRIGGERING AND MANAGEMENT," U.S. Patent Application Ser. No. 14/168,876, filed January 30, 2014, and entitled, "WIRELESS TRANSCEIVER," which is a continuation of U.S. Patent Application Ser. No. 12/905,248, filed October 15, 2010, and entitled, "WIRELESS TRANSCEIVER," which is a continuation of U.S. Patent Application Ser. No. 12/182,079, filed July 29, 2008, and entitled "WIRELESS TRANSCEIVER," now U.S. Pat. No. 7,817,031, which is a divisional of U.S. Patent Application Ser. No. 11/562,313, filed November 21, 2006, and entitled "WIRELESS TRANSCEIVER," now U.S. Pat. No. 7,411,494, which is a continuation of U.S. Patent Application Ser. No. 10/856,231, filed May 27, 2004, and entitled "WIRELESS TRANSCEIVER," now U.S. Pat. No. 7,142,107. The entire disclosures of the above applications are hereby incorporated by reference, for all purposes, as if fully set forth herein.

## BACKGROUND

**[0002]** 1. Field of the Invention

**[0003]** The present invention relates to a wireless sensor unit system providing bi-directional communication between a sensor (e.g., smoke sensor, fire sensor, temperature sensor, water, etc.) and a repeater or base unit in a building protection system.

**[0004]** 2. Description of the Related Art

**[0005]** Maintaining and protecting a building or complex is difficult and costly. Some conditions, such as fires, gas leaks, etc. are a danger to the occupants and the structure. Other malfunctions, such as water leaks in roofs, plumbing, etc. are not necessarily dangerous for the occupants, but can nevertheless cause considerable damage. In many cases, an adverse ambient condition such as water leakage, fire, etc. is not detected in the early stages when the damage and/or danger is relatively small. Sensors can be used to detect such adverse ambient conditions,

but sensors present their own set of problems. For example, adding sensors, such as, for example, smoke detectors, water sensors, and the like in an existing structure can be prohibitively expensive due to the cost of installing wiring between the remote sensors and a centralized monitoring device used to monitor the sensors. Adding wiring to provide power to the sensors further increases the cost. Moreover, with regard to fire sensors, most fire departments will not allow automatic notification of the fire department based on the data from a smoke detector alone. Most fire departments require that a specific temperature rate-of-rise be detected before an automatic fire alarm system can notify the fire department. Unfortunately, detecting fire by temperature rate-of-rise generally means that the fire is not detected until it is too late to prevent major damage.

## SUMMARY

**[0006]** The present invention solves these and other problems by providing a relatively low cost, robust, wireless sensor system that provides an extended period of operability without maintenance. The system includes one or more intelligent sensor units and a base unit that can communicate with the sensor units. When one or more of the sensor units detects an anomalous condition (e.g., smoke, fire, water, etc.) the sensor unit communicates with the base unit and provides data regarding the anomalous condition. The base unit can contact a supervisor or other responsible person by a plurality of techniques, such as, telephone, pager, cellular telephone, Internet (and/or local area network), etc. In one embodiment, one or more wireless repeaters are used between the sensor units and the base unit to extend the range of the system and to allow the base unit to communicate with a larger number of sensors.

**[0007]** In one embodiment, the sensor system includes a number of sensor units located throughout a building that sense conditions and report anomalous results back to a central reporting station. The sensor units measure conditions that might indicate a fire, water leak, etc. The sensor units report the measured data to the base unit whenever the sensor unit determines that the measured data is sufficiently anomalous to be reported. The base unit can notify a responsible person such as, for example a building manager, building owner, private security service, etc. In one embodiment, the sensor units do not send an alarm signal to the central location. Rather, the sensors send quantitative measured data (e.g., smoke density, temperature rate of rise, etc.) to the central reporting station.

**[0008]** In one embodiment, the sensor system includes a battery-operated sensor unit that detects a condition, such as, for example, smoke, temperature, humidity, moisture, water, water temperature, carbon monoxide, natural gas, propane gas, other flammable gases, radon, poison gasses, etc. The sensor unit is placed in a building, apartment, office, residence, etc. In order to conserve battery power, the sensor is normally placed in a low-power mode. In one embodiment, while in the low power mode, the sensor unit takes regular sensor readings and evaluates the readings to determine if an anomalous condition exists (*e.g.*, block 901 of method 900 of FIG. 9). If an anomalous condition is detected, then the sensor unit "wakes up" (block 902) and begins communicating with the base unit or with a repeater (block 903). At programmed intervals, the sensor also "wakes up" and sends status information to the base unit (or repeater) and then listens for commands for a period of time.

**[0009]** In one embodiment, the sensor unit is bi-directional and configured to receive instructions from the central reporting station (or repeater). Thus, for example, the central reporting station can instruct the sensor to: perform additional measurements; go to a standby mode; wake up; report battery status; change wake-up interval; run self-diagnostics and report results; etc. In one embodiment, the sensor unit also includes a tamper switch. When tampering with the sensor is detected, the sensor reports such tampering to the base unit. In one embodiment, the sensor reports its general health and status to the central reporting station on a regular basis (e.g., results of self-diagnostics, battery health, etc.).

**[0010]** In one embodiment, the sensor unit provides two wake-up modes, a first wake-up mode for taking measurements (and reporting such measurements if deemed necessary), and a second wake-up mode for listening for commands from the central reporting station. The two wake-up modes, or combinations thereof, can occur at different intervals.

**[0011]** In one embodiment, the sensor units use spread-spectrum techniques to communicate with the base unit and/or the repeater units. In one embodiment, the sensor units use frequency-hopping spread-spectrum. In one embodiment, each sensor unit has an Identification code (ID) and the sensor units attaches its ID to outgoing communication packets. In one embodiment, when receiving wireless data, each sensor unit ignores data that is addressed to other sensor units.

**[0012]** The repeater unit is configured to relay communications traffic between a number of sensor units and the base unit. The repeater units typically operate in an environment with

several other repeater units and thus each repeater unit contains a database (e.g., a lookup table) of sensor IDs. During normal operation, the repeater only communicates with designated wireless sensor units whose IDs appears in the repeater's database. In one embodiment, the repeater is battery-operated and conserves power by maintaining an internal schedule of when its designated sensors are expected to transmit and going to a low-power mode when none of its designated sensor units is scheduled to transmit. In one embodiment, the repeater uses spread-spectrum to communicate with the base unit and the sensor units. In one embodiment, the repeater uses frequency-hopping spread-spectrum to communicate with the base unit and the sensor units. In one embodiment, each repeater unit has an ID and the repeater unit attaches its ID to outgoing communication packets that originate in the repeater unit. In one embodiment, each repeater unit ignores data that is addressed to other repeater units or to sensor units not serviced by the repeater.

**[0013]** In one embodiment, the repeater is configured to provide bi-directional communication between one or more sensors and a base unit. In one embodiment, the repeater is configured to receive instructions from the central reporting station (or repeater). Thus, for example, the central reporting station can instruct the repeater to: send commands to one or more sensors; go to standby mode; "wake up"; report battery status; change wake-up interval; run self-diagnostics and report results; etc.

**[0014]** The base unit is configured to receive measured sensor data from a number of sensor units. In one embodiment, the sensor information is relayed through the repeater units. The base unit also sends commands to the repeater units and/or sensor units. In one embodiment, the base unit includes a diskless PC that runs off of a CD-ROM, flash memory, DVD, or other read-only device, etc. When the base unit receives data from a wireless sensor indicating that there may be an emergency condition (e.g., a fire or excess smoke, temperature, water, flammable gas, etc.) the base unit will attempt to notify a responsible party (e.g., a building manager) by several communication channels (e.g., telephone, Internet, pager, cell phone, etc.). In one embodiment, the base unit sends instructions to place the wireless sensor in an alert mode (inhibiting the wireless sensor's low-power mode). In one embodiment, the base unit sends instructions to activate one or more additional sensors near the first sensor.

**[0015]** In one embodiment, the base unit maintains a database of the health, battery status, signal strength, and current operating status of all of the sensor units and repeater units in the wireless

sensor system. In one embodiment, the base unit automatically performs routine maintenance by sending commands to each sensor to run a self-diagnostic and report the results. The bases unit collects such diagnostic results. In one embodiment, the base unit sends instructions to each sensor telling the sensor how long to wait between "wakeup" intervals. In one embodiment, the base unit schedules different wakeup intervals to different sensors based on the sensor's health, battery health, location, etc. In one embodiment, the base unit sends instructions to repeaters to route sensor information around a failed repeater.

## BRIEF DESCRIPTION OF THE DRAWINGS

**[0016] FIG. 1** shows a sensor system that includes a plurality of sensor units that communicate with a base unit through a number of repeater units.

**[0017] FIG. 2** is a block diagram of a sensor unit.

**[0018] FIG. 3** is a block diagram of a repeater unit.

**[0019] FIG. 4** is a block diagram of the base unit.

**[0020] FIG. 5** shows one embodiment a network communication packet used by the sensor units, repeater units, and the base unit.

**[0021] FIG. 6** is a flowchart showing operation of a sensor unit that provides relatively continuous monitoring.

**[0022] FIG. 7** is a flowchart showing operation of a sensor unit that provides periodic monitoring.

**[0023] FIG. 8** shows how the sensor system can be used to detected water leaks.

**[0024] FIG. 9** illustrates a method for using a wireless ambient sensor unit.

## DETAILED DESCRIPTION

**[0025]** FIG. 1 shows an sensor system 100 that includes a plurality of sensor units 102-106 that communicate with a base unit 112 through a number of repeater units 110-111. The sensor units 102-106 are located throughout a building 101. Sensor units 102-104 communicate with the repeater 110. Sensor units 105-105 communicate with the repeater 111. The repeaters 110-111 communicate with the base unit 112. The base unit 112 communicates with a monitoring computer system 113 through a computer network connection such as, for example, Ethernet, wireless Ethernet, firewire port, Universal Serial Bus (USB) port, bluetooth, etc. The computer system 113 contacts a building manager, maintenance service, alarm service, or other responsible

personnel 120 using one or more of several communication systems such as, for example, telephone 121, pager 122, cellular telephone 123 (e.g., direct contact, voicemail, text, etc.), and/or through the Internet and/or local area network 124 (e.g., through email, instant messaging, network communications, etc.). In one embodiment, multiple base units 112 are provided to the monitoring computer 113. In one embodiment, the monitoring computer 113 is provided to more than one compute monitor, thus allowing more data to be displayed than can conveniently be displayed on a single monitor. In one embodiment, the monitoring computer 113 is provided to multiple monitors located in different locations, thus allowing the data form the monitoring computer 113 to be displayed in multiple locations.

**[0026]** The sensor units 102-106 include sensors to measure conditions, such as, for example, smoke, temperature, moisture, water, water temperature, humidity, carbon monoxide, natural gas, propane gas, security alarms, intrusion alarms (e.g., open doors, broken windows, open windows, and the like), other flammable gases, radon, poison gasses, etc. Different sensor units can be configured with different sensors or with combinations of sensors. Thus, for example, in one installation the sensor units 102 and 104 could be configured with smoke and/or temperature sensors while the sensor unit 103 could be configured with a humidity sensor.

**[0027]** The discussion that follows generally refers to the sensor unit 102 as an example of a sensor unit, with the understanding that the description of the sensor unit 102 can be applied to many sensor units. Similarly, the discussion generally refers to the repeater 110 by way of example, and not limitation. It will also be understood by one of ordinary skill in the art that repeaters are useful for extending the range of the sensor units 102-106 but are not required in all embodiments. Thus, for example in one embodiment, one or more of the sensor units 102-106 can communicate directly with the base unit 112 without going through a repeater. It will also be understood by one of ordinary skill in the art that FIG. 1 shows only five sensor units (102-106) and two repeater units (110-111) for purposes of illustration and not by way of limitation. An installation in a large apartment building or complex would typically involve many sensor units and repeater units. Moreover, one of ordinary skill in the art will recognize that one repeater unit can service relatively many sensor units. In one embodiment, the sensor units 102 can communicate directly with the base unit 112 without going through a repeater 111.

**[0028]** When the sensor unit 102 detects an anomalous condition (e.g., smoke, fire, water, etc.) the sensor unit communicates with the appropriate repeater unit 110 and provides data regarding

the anomalous condition. The repeater unit 110 forwards the data to the base unit 112, and the base unit 112 forwards the information to the computer 113. The computer 113 evaluates the data and takes appropriate action. If the computer 113 determines that the condition is an emergency (e.g., fire, smoke, large quantities of water), then the computer 113 contacts the appropriate personnel 120. If the computer 113 determines that the situation warrants reporting, but is not an emergency, then the computer 113 logs the data for later reporting. In this way, the sensor system 100 can monitor the conditions in and around the building 101.

**[0029]** In one embodiment, the sensor unit 102 has an internal power source (e.g., battery, solar cell, fuel cell, etc.). In order to conserve power, the sensor unit 102 is normally placed in a low-power mode. In one embodiment, using sensors that require relatively little power, while in the low power mode the sensor unit 102 takes regular sensor readings and evaluates the readings to determine if an anomalous condition exists. In one embodiment, using sensors that require relatively more power, while in the low power mode the sensor unit 102 takes and evaluates sensor readings at periodic intervals. If an anomalous condition is detected, then the sensor unit 102 "wakes up" and begins communicating with the base unit 112 through the repeater 110. At programmed intervals, the sensor unit 102 also "wakes up" and sends status information (e.g., power levels, self-diagnostic information, etc.) to the base unit (or repeater) and then listens for commands for a period of time. In one embodiment, the sensor unit 102 also includes a tamper detector. When tampering with the sensor unit 102 is detected, the sensor unit 102 reports such tampering to the base unit 112.

**[0030]** In one embodiment, the sensor unit 102 provides bi-directional communication and is configured to receive data and/or instructions from the base unit 112. Thus, for example, the base unit 112 can instruct the sensor unit 102 to perform additional measurements, to go to a standby mode, to wake up, to report battery status, to change wake-up interval, to run self-diagnostics and report results, etc. In one embodiment, the sensor unit 102 reports its general health and status on a regular basis (e.g., results of self-diagnostics, battery health, etc.).

**[0031]** In one embodiment, the sensor unit 102 provides two wake-up modes, a first wake-up mode for taking measurements (and reporting such measurements if deemed necessary), and a second wake-up mode for listening for commands from the central reporting station. The two wake-up modes, or combinations thereof, can occur at different intervals.

**[0032]** In one embodiment, the sensor unit 102 use spread-spectrum techniques to communicate with the repeater unit 110. In one embodiment, the sensor unit 102 use frequency-hopping spread-spectrum. In one embodiment, the sensor unit 102 has an address or identification (ID) code that distinguishes the sensor unit 102 from the other sensor units. The sensor unit 102 attaches its ID to outgoing communication packets so that transmissions from the sensor unit 102 can be identified by the repeater 110. The repeater 110 attaches the ID of the sensor unit 102 to data and/or instructions that are transmitted to the sensor unit 102. In one embodiment, the sensor unit 102 ignores data and/or instructions that are addressed to other sensor units.

**[0033]** In one embodiment, the sensor unit 102 includes a reset function. In one embodiment, the reset function is activated by the reset switch 208. In one embodiment, the reset function is active for a prescribed interval of time. During the reset interval, the transceiver 203 is in a receiving mode and can receive the identification code from an external programmer. In one embodiment, the external programmer wirelessly transmits a desired identification code. In one embodiment, the identification code is programmed by an external programmer that is connected to the sensor unit 102 through an electrical connector. In one embodiment, the electrical connection to the sensor unit 102 is provided by sending modulated control signals (power line carrier signals) through a connector used to connect the power source 206. In one embodiment, the external programmer provides power and control signals. In one embodiment, the external programmer also programs the type of sensor(s) installed in the sensor unit. In one embodiment, the identification code includes an area code (e.g., apartment number, zone number, floor number, etc.) and a unit number (e.g., unit 1, 2, 3, etc.).

**[0034]** In one embodiment, the sensor communicates with the repeater on the 900 MHz band. This band provides good transmission through walls and other obstacles normally found in and around a building structure. In one embodiment, the sensor communicates with the repeater on bands above and/or below the 900 MHz band. In one embodiment, the sensor, repeater, and/or base unit listen to a radio frequency channel before transmitting on that channel or before beginning transmission. If the channel is in use, (e.g., by another devise such as another repeater, a cordless telephone, etc.) then the sensor, repeater, and/or base unit changes to a different channel. In one embodiment, the sensor, repeater, and/or base unit coordinate frequency hopping by listening to radio frequency channels for interference and using an algorithm to select a next channel for transmission that avoids the interference. Thus, for

example, in one embodiment, if a sensor senses a dangerous condition and goes into a continuous transmission mode, the sensor will test (e.g., listen to) the channel before transmission to avoid channels that are blocked, in use, or jammed. In one embodiment, the sensor continues to transmit data until it receives an acknowledgement from the base unit that the message has been received. In one embodiment, the sensor transmits data having a normal priority (e.g., status information) and does not look for an acknowledgement, and the sensor transmits data having elevated priority (e.g., excess smoke, temperature, etc.) until an acknowledgement is received.

**[0035]** The repeater unit 110 is configured to relay communications traffic between the sensor 102 (and, similarly, the sensor units 103-104) and the base unit 112. The repeater unit 110 typically operates in an environment with several other repeater units (such as the repeater unit 111 in FIG. 1) and thus the repeater unit 110 contains a database (e.g., a lookup table) of sensor unit IDs. In FIG. 1, the repeater 110 has database entries for the Ids of the sensors 102-104, and thus the sensor 110 will only communicate with sensor units 102-104. In one embodiment, the repeater 110 has an internal power source (e.g., battery, solar cell, fuel cell, etc.) and conserves power by maintaining an internal schedule of when the sensor units 102-104 are expected to transmit. In one embodiment, the repeater unit 110 goes to a low-power mode when none of its designated sensor units is scheduled to transmit. In one embodiment, the repeater 110 uses spread-spectrum techniques to communicate with the base unit 112 and with the sensor units 102-104. In one embodiment, the repeater 110 uses frequency-hopping spread-spectrum to communicate with the base unit 112 and the sensor units 102-104. In one embodiment, the repeater unit 110 has an address or identification (ID) code and the repeater unit 110 attaches its address to outgoing communication packets that originate in the repeater (that is, packets that are not being forwarded). In one embodiment, the repeater unit 110 ignores data and/or instructions that are addressed to other repeater units or to sensor units not serviced by the repeater 110.

**[0036]** In one embodiment, the base unit 112 communicates with the sensor unit 102 by transmitting a communication packet addressed to the sensor unit 102. The repeaters 110 and 111 both receive the communication packet addressed to the sensor unit 102. The repeater unit 111 ignores the communication packet addressed to the sensor unit 102. The repeater unit 110 transmits the communication packet addressed to the sensor unit 102 to the sensor unit 102. In

one embodiment, the sensor unit 102, the repeater unit 110, and the base unit 112 communicate using Frequency-Hopping Spread Spectrum (FHSS), also known as channel-hopping.

**[0037]** Frequency-hopping wireless systems offer the advantage of avoiding other interfering signals and avoiding collisions. Moreover, there are regulatory advantages given to systems that do not transmit continuously at one frequency. Channel-hopping transmitters change frequencies after a period of continuous transmission, or when interference is encountered. These systems may have higher transmit power and relaxed limitations on in-band spurs. FCC regulations limit transmission time on one channel to 400 milliseconds (averaged over 10-20 seconds depending on channel bandwidth) before the transmitter must change frequency. There is a minimum frequency step when changing channels to resume transmission. If there are 25 to 49 frequency channels, regulations allow effective radiated power of 24 dBm, spurs must be -20 dBc, and harmonics must be -41.2 dBc. With 50 or more channels, regulations allow effective radiated power to be up to 30 dBm.

**[0038]** In one embodiment, the sensor unit 102, the repeater unit 110, and the base unit 112 communicate using FHSS wherein the frequency hopping of the sensor unit 102, the repeater unit 110, and the base unit 112 are not synchronized such that at any given moment, the sensor unit 102 and the repeater unit 110 are on different channels. In such a system, the base unit 112 communicates with the sensor unit 102 using the hop frequencies synchronized to the repeater unit 110 rather than the sensor unit 102. The repeater unit 110 then forwards the data to the sensor unit using hop frequencies synchronized to the sensor unit 102. Such a system largely avoids collisions between the transmissions by the base unit 112 and the repeater unit 110.

**[0039]** In one embodiment, the sensor units 102-106 all use FHSS and the sensor units 102-106 are not synchronized. Thus, at any given moment, it is unlikely that any two or more of the sensor units 102-106 will transmit on the same frequency. In this manner, collisions are largely avoided. In one embodiment, collisions are not detected but are tolerated by the system 100. If a collisions does occur, data lost due to the collision is effectively re-transmitted the next time the sensor units transmit sensor data. When the sensor units 102-106 and repeater units 110-111 operate in asynchronous mode, then a second collision is highly unlikely because the units causing the collisions have hopped to different channels. In one embodiment, the sensor units 102-106, repeater units 110-110, and the base unit 112 use the same hop rate. In one embodiment, the sensor units 102-106, repeater units 110-110, and the base unit 112 use the

same pseudo-random algorithm to control channel hopping, but with different starting seeds. In one embodiment, the starting seed for the hop algorithm is calculated from the ID of the sensor units 102-106, repeater units 110-110, or the base unit 112.

**[0040]** In an alternative embodiment, the base unit communicates with the sensor unit 102 by sending a communication packet addressed to the repeater unit 110, where the packet sent to the repeater unit 110 includes the address of the sensor unit 102. The repeater unit 102 extracts the address of the sensor unit 102 from the packet and creates and transmits a packet addressed to the sensor unit 102.

**[0041]** In one embodiment, the repeater unit 110 is configured to provide bi-directional communication between its sensors and the base unit 112. In one embodiment, the repeater 110 is configured to receive instructions from the base unit 110. Thus, for example, the base unit 112 can instruct the repeater to: send commands to one or more sensors; go to standby mode; "wake up"; report battery status; change wake-up interval; run self-diagnostics and report results; etc.

**[0042]** The base unit 112 is configured to receive measured sensor data from a number of sensor units either directly, or through the repeaters 110-111. The base unit 112 also sends commands to the repeater units 110-111 and/or to the sensor units 110-111. In one embodiment, the base unit 112 communicates with a diskless computer 113 that runs off of a CD-ROM. When the base unit 112 receives data from a sensor unit 102-111 indicating that there may be an emergency condition (e.g., a fire or excess smoke, temperature, water, etc.) the computer 113 will attempt to notify the responsible party 120.

**[0043]** In one embodiment, the computer 112 maintains a database of the health, power status (e.g., battery charge), and current operating status of all of the sensor units 102-106 and the repeater units 110-111. In one embodiment, the computer 113 automatically performs routine maintenance by sending commands to each sensor unit 102-106 to run a self-diagnostic and report the results. The computer 113 collects and logs such diagnostic results. In one embodiment, the computer 113 sends instructions to each sensor unit 102-106 telling the sensor how long to wait between "wakeup" intervals. In one embodiment, the computer 113 schedules different wakeup intervals to different sensor unit 102-106 based on the sensor unit's health, power status, location, etc. In one embodiment, the computer 113 schedules different wakeup intervals to different sensor unit 102-106 based on the type of data and urgency of the data collected by the sensor unit (e.g., sensor units that have smoke and/or temperature sensors

produce data that should be checked relatively more often than sensor units that have humidity or moisture sensors). In one embodiment, the base unit sends instructions to repeaters to route sensor information around a failed repeater.

**[0044]** In one embodiment, the computer 113 produces a display that tells maintenance personnel which sensor units 102-106 need repair or maintenance. In one embodiment, the computer 113 maintains a list showing the status and/or location of each sensor according to the ID of each sensor.

**[0045]** In one embodiment, the sensor units 102-106 and/or the repeater units 110-111 measure the signal strength of the wireless signals received (e.g., the sensor unit 102 measures the signal strength of the signals received from the repeater unit 110, the repeater unit 110 measures the signal strength received from the sensor unit 102 and/or the base unit 112). The sensor units 102-106 and/or the repeater units 110-111 report such signal strength measurement back to the computer 113. The computer 113 evaluates the signal strength measurements to ascertain the health and robustness of the sensor system 100. In one embodiment, the computer 113 uses the signal strength information to re-route wireless communications traffic in the sensor system 100. Thus, for example, if the repeater unit 110 goes offline or is having difficulty communicating with the sensor unit 102, the computer 113 can send instructions to the repeater unit 111 to add the ID of the sensor unit 102 to the database of the repeater unit 111 (and similarly, send instructions to the repeater unit 110 to remove the ID of the sensor unit 102), thereby routing the traffic for the sensor unit 102 through the router unit 111 instead of the router unit 110.

**[0046]** FIG. 2 is a block diagram of the sensor unit 102. In the sensor unit 102, one or more sensors 201 and a transceiver 203 are provided to a controller 202. The controller 202 typically provides power, data, and control information to the sensor(s) 201 and the transceiver 202. A power source 206 is provided to the controller 202. An optional tamper sensor 205 is also provided to the controller 202. A reset device (e.g., a switch) 208 is proved to the controller 202. In one embodiment, an optional audio output device 209 is provided. In one embodiment, the sensor 201 is configured as a plug-in module that can be replaced relatively easily.

**[0047]** In one embodiment, the transceiver 203 is based on a TRF 6901 transceiver chip from Texas Instruments, Inc. In one embodiment, the controller 202 is a conventional programmable microcontroller. In one embodiment, the controller 202 is based on a Field Programmable Gate Array (FPGA), such as, for example, provided by Xilinx Corp. In one embodiment, the sensor

201 includes an optoelectric smoke sensor with a smoke chamber. In one embodiment, the sensor 201 includes a thermistor. In one embodiment, the sensor 201 includes a humidity sensor. In one embodiment, the sensor 201 includes an sensor, such as, for example, a water level sensor, a water temperature sensor, a carbon monoxide sensor, a moisture sensor, a water flow sensor, natural gas sensor, propane sensor, etc.

**[0048]** The controller 202 receives sensor data from the sensor(s) 201. Some sensors 201 produce digital data. However, for many types of sensors 201, the sensor data is analog data. Analog sensor data is converted to digital format by the controller 202. In one embodiment, the controller evaluates the data received from the sensor(s) 201 and determines whether the data is to be transmitted to the base unit 112. The sensor unit 102 generally conserves power by not transmitting data that falls within a normal range. In one embodiment, the controller 202 evaluates the sensor data by comparing the data value to a threshold value (e.g., a high threshold, a low threshold, or a high-low threshold). If the data is outside the threshold (e.g., above a high threshold, below a low threshold, outside an inner range threshold, or inside an outer range threshold), then the data is deemed to be anomalous and is transmitted to the base unit 112. In one embodiment, the data threshold is programmed into the controller 202. In one embodiment, the data threshold is programmed by the base unit 112 by sending instructions to the controller 202. In one embodiment, the controller 202 obtains sensor data and transmits the data when commanded by the computer 113.

**[0049]** In one embodiment, the tamper sensor 205 is configured as a switch that detects removal of or tampering with the sensor unit 102.

**[0050]** FIG. 3 is a block diagram of the repeater unit 110. In the repeater unit 110, a first transceiver 302 and a second transceiver 305 are provided to a controller 303. The controller 303 typically provides power, data, and control information to the transceivers 302, 304. A power source 306 is provided to the controller 303. An optional tamper sensor (not shown) is also provided to the controller 303.

**[0051]** When relaying sensor data to the base unit 112, the controller 303 receives data from the first transceiver 303 and provides the data to the second transceiver 304. When relaying instructions from the base unit 112 to a sensor unit, the controller 303 receives data from the second transceiver 304 and provides the data to the first transceiver 302. In one embodiment, the controller 303 conserves power by powering-down the transceivers 302, 304 during periods

when the controller 303 is not expecting data. The controller 303 also monitors the power source 306 and provides status information, such as, for example, self-diagnostic information and/or information about the health of the power source 306, to the base unit 112. In one embodiment, the controller 303 sends status information to the base unit 112 at regular intervals. In one embodiment, the controller 303 sends status information to the base unit 112 when requested by the base unit 112. In one embodiment, the controller 303 sends status information to the base unit 112 when a fault condition (e.g., battery low) is detected.

**[0052]** In one embodiment, the controller 303 includes a table or list of identification codes for wireless sensor units 102. The repeater 303 forwards packets received from, or sent to, sensor units 102 in the list. In one embodiment, the repeater 110 receives entries for the list of sensor units from the computer 113. In one embodiment, the controller 303 determines when a transmission is expected from the sensor units 102 in the table of sensor units and places the repeater 110 (e.g., the transceivers 302, 304) in a low-power mode when no transmissions are expected from the transceivers on the list. In one embodiment, the controller 303 recalculates the times for low-power operation when a command to change reporting interval is forwarded to one of the sensor units 102 in the list (table) of sensor units or when a new sensor unit is added to the list (table) of sensor units.

**[0053]** FIG. 4 is a block diagram of the base unit 112. In the base unit 112, a transceiver 402 and a computer interface 404 are provided to a controller 403. The controller 303 typically provides data and control information to the transceivers 402 and to the interface. The interface 402 is provided to a port on the monitoring computer 113. The interface 402 can be a standard computer data interface, such as, for example, Ethernet, wireless Ethernet, firewire port, Universal Serial Bus (USB) port, bluetooth, etc.

**[0054]** FIG. 5 shows one embodiment a communication packet 500 used by the sensor units, repeater units, and the base unit. The packet 500 includes a preamble portion 501, an address (or ID) portion 502, a data payload portion 503, and an integrity portion 504. In one embodiment, the integrity portion 504 includes a checksum. In one embodiment, the sensor units 102-106, the repeater units 110-111, and the base unit 112 communicate using packets such as the packet 500. In one embodiment, the packets 500 are transmitted using FHSS.

**[0055]** In one embodiment, the data packets that travel between the sensor unit 102, the repeater unit 111, and the base unit 112 are encrypted. In one embodiment, the data packets that travel

between the sensor unit 102, the repeater unit 111, and the base unit 112 are encrypted and an authentication code is provided in the data packet so that the sensor unit 102, the repeater unit, and/or the base unit 112 can verify the authenticity of the packet.

**[0056]** In one embodiment the address portion 502 includes a first code and a second code. In one embodiment, the repeater 111 only examines the first code to determine if the packet should be forwarded. Thus, for example, the first code can be interpreted as a building (or building complex) code and the second code interpreted as a subcode (e.g., an apartment code, area code, etc.). A repeater that uses the first code for forwarding thus forwards packets having a specified first code (e.g., corresponding to the repeater's building or building complex). Thus alleviates the need to program a list of sensor units 102 into a repeater, since a group of sensors in a building will typically all have the same first code but different second codes. A repeater so configured, only needs to know the first code to forward packets for any repeater in the building or building complex. This does, however, raise the possibility that two repeaters in the same building could try to forward packets for the same sensor unit 102. In one embodiment, each repeater waits for a programmed delay period before forwarding a packet. Thus reducing the chance of packet collisions at the base unit (in the case of sensor unit to base unit packets) and reducing the chance of packet collisions at the sensor unit (in the case of base unit to sensor unit packets). In one embodiment, a delay period is programmed into each repeater. In one embodiment, delay periods are pre-programmed onto the repeater units at the factory or during installation. In one embodiment, a delay period is programmed into each repeater by the base unit 112. In one embodiment, a repeater randomly chooses a delay period. In one embodiment, a repeater randomly chooses a delay period for each forwarded packet. In one embodiment, the first code is at least 6 digits. In one embodiment, the second code is at least 5 digits.

**[0057]** In one embodiment, the first code and the second code are programmed into each sensor unit at the factory. In one embodiment, the first code and the second code are programmed when the sensor unit is installed. In one embodiment, the base unit 112 can re-program the first code and/or the second code in a sensor unit.

**[0058]** In one embodiment, collisions are further avoided by configuring each repeater unit 111 to begin transmission on a different frequency channel. Thus, if two repeaters attempt to begin transmission at the same time, the repeaters will not interfere with each other because the transmissions will begin on different channels (frequencies).

**[0059]** FIG. 6 is a flowchart showing one embodiment of the operation of the sensor unit 102 wherein relatively continuous monitoring is provided. In FIG. 6, a power up block 601 is followed by an initialization block 602. After initialization, the sensor unit 102 checks for a fault condition (e.g., activation of the tamper sensor, low battery, internal fault, etc.) in a block 603. A decision block 604 checks the fault status. If a fault has occurred, then the process advances to a block 605 were the fault information is transmitted to the repeater 110 (after which, the process advances to a block 612); otherwise, the process advances to a block 606. In the block 606, the sensor unit 102 takes a sensor reading from the sensor(s) 201. The sensor data is subsequently evaluated in a block 607. If the sensor data is abnormal, then the process advances to a transmit block 609 where the sensor data is transmitted to the repeater 110 (after which, the process advances to a block 612); otherwise, the process advances to a timeout decision block 610. If the timeout period has not elapsed, then the process returns to the fault-check block 603; otherwise, the process advances to a transmit status block 611 where normal status information is transmitted to the repeater 110. In one embodiment, the normal status information transmitted is analogous to a simple "ping" which indicates that the sensor unit 102 is functioning normally. After the block 611, the process proceeds to a block 612 where the sensor unit 102 momentarily listens for instructions from the monitor computer 113. If an instruction is received, then the sensor unit 102 performs the instructions, otherwise, the process returns to the status check block 603. In one embodiment, transceiver 203 is normally powered down. The controller 202 powers up the transceiver 203 during execution of the blocks 605, 609, 611, and 612. The monitoring computer 113 can send instructions to the sensor unit 102 to change the parameters used to evaluate data used in block 607, the listen period used in block 612, etc.

**[0060]** Relatively continuous monitoring, such as shown in FIG. 6, is appropriate for sensor units that sense relatively high-priority data (e.g., smoke, fire, carbon monoxide, flammable gas, etc.). By contrast, periodic monitoring can be used for sensors that sense relatively lower priority data (e.g., humidity, moisture, water usage, etc.). FIG. 7 is a flowchart showing one embodiment of operation of the sensor unit 102 wherein periodic monitoring is provided. In FIG. 7, a power up block 701 is followed by an initialization block 702. After initialization, the sensor unit 102 enters a low-power sleep mode. If a fault occurs during the sleep mode (e.g., the tamper sensor is activated), then the process enters a wake-up block 704 followed by a transmit fault block 705. If no fault occurs during the sleep period, then when the specified sleep period has expired, the

process enters a block 706 where the sensor unit 102 takes a sensor reading from the sensor(s) 201. The sensor data is subsequently sent to the monitoring computer 113 in a report block 707. After reporting, the sensor unit 102 enters a listen block 708 where the sensor unit 102 listens for a relatively short period of time for instructions from monitoring computer 708. If an instruction is received, then the sensor unit 102 performs the instructions, otherwise, the process returns to the sleep block 703. In one embodiment, the sensor 201 and transceiver 203 are normally powered down. The controller 202 powers up the sensor 201 during execution of the block 706. The controller 202 powers up the transceiver during execution of the blocks 705, 707, and 708. The monitoring computer 113 can send instructions to the sensor unit 102 to change the sleep period used in block 703, the listen period used in block 708, etc.

**[0061]** In one embodiment, the sensor unit transmits sensor data until a handshaking-type acknowledgement is received. Thus, rather than sleep of no instructions or acknowledgements are received after transmission (e.g., after the decision block 613 or 709) the sensor unit 102 retransmits its data and waits for an acknowledgement. The sensor unit 102 continues to transmit data and wait for an acknowledgement until an acknowledgement is received. In one embodiment, the sensor unit accepts an acknowledgement from a repeater unit 111 and it then becomes the responsibility of the repeater unit 111 to make sure that the data is forwarded to the base unit 112. In one embodiment, the repeater unit 111 does not generate the acknowledgement, but rather forwards an acknowledgement from the base unit 112 to the sensor unit 102. The two-way communication ability of the sensor unit 102 provides the capability for the base unit 112 to control the operation of the sensor unit 102 and also provides the capability for robust handshaking-type communication between the sensor unit 102 and the base unit 112.

**[0062]** Regardless of the normal operating mode of the sensor unit 102 (e.g., using the Flowcharts of FIGS. 6, 7, or other modes) in one embodiment, the monitoring computer 113 can instruct the sensor unit 102 to operate in a relatively continuous mode where the sensor repeatedly takes sensor readings and transmits the readings to the monitoring computer 113. Such a mode can be used, for example, when the sensor unit 102 (or a nearby sensor unit) has detected a potentially dangerous condition (e.g., smoke, rapid temperature rise, etc.).

**[0063]** FIG. 8 shows the sensor system used to detect water leaks. In one embodiment, the sensor unit 102 includes a water level sensor and 803 and/or a water temperature sensor 804. The water level sensor 803 and/or water temperature sensor 804 are place, for example, in a tray

underneath a water heater 801 in order to detect leaks from the water heater 801 and thereby prevent water damage from a leaking water heater. In one embodiment, a temperature sensor is also provide to measure temperature near the water heater. The water level sensor can also be placed under a sink, in a floor sump, etc. In one embodiment, the severity of a leak is ascertained by the sensor unit 102 (or the monitoring computer 113) by measuring the rate of rise in the water level. When placed near the hot water tank 801, the severity of a leak can also be ascertained at least in part by measuring the temperature of the water. In one embodiment, a first water flow sensor is placed in an input water line for the hot water tank 801 and a second water flow sensor is placed in an output water line for the hot water tank. Leaks in the tank can be detected by observing a difference between the water flowing through the two sensors.

**[0064]** In one embodiment, a remote shutoff valve 810 is provided, so that the monitoring system 100 can shutoff the water supply to the water heater when a leak is detected. In one embodiment, the shutoff valve is controlled by the sensor unit 102. In one embodiment, the sensor unit 102 receives instructions from the base unit 112 to shut off the water supply to the heater 801. In one embodiment, the responsible party 120 sends instructions to the monitoring computer 113 instructing the monitoring computer 113 to send water shut off instructions to the sensor unit 102. Similarly, in one embodiment, the sensor unit 102 controls a gas shutoff valve 811 to shut off the gas supply to the water heater 801 and/or to a furnace (not shown) when dangerous conditions (such as, for example, gas leaks, carbon monoxide, etc.) are detected. In one embodiment, a gas detector 812 is provided to the sensor unit 102. In one embodiment, the gas detector 812 measures carbon monoxide. In one embodiment, the gas detector 812 measures flammable gas, such as, for example, natural gas or propane.

**[0065]** In one embodiment, an optional temperature sensor 818 is provided to measure stack temperature. Using data from the temperature sensor 818, the sensor unit 102 reports conditions, such as, for example, excess stack temperature. Excess stack temperature is often indicative of poor heat transfer (and thus poor efficiency) in the water heater 818.

**[0066]** In one embodiment, an optional temperature sensor 819 is provided to measure temperature of water in the water heater 810. Using data from the temperature sensor 819, the sensor unit 102 reports conditions, such as, for example, over-temperature or under-temperature of the water in the water heater.

**[0067]** In one embodiment, an optional current probe 821 is provided to measure electric current

provided to a heating element 820 in an electric water heater. Using data from the current probe 821, the sensor unit 102 reports conditions, such as, for example, no current (indicating a burned-out heating element 820). An over-current condition often indicates that the heating element 820 is encrusted with mineral deposits and needs to be replaced or cleaned. By measuring the current provided to the water heater, the monitoring system can measure the amount of energy provided to the water heater and thus the cost of hot water, and the efficiency of the water heater.

**[0068]** In one embodiment, the sensor 803 includes a moisture sensor. Using data from the moisture sensor, the sensor unit 102 reports moisture conditions, such as, for example, excess moisture that would indicate a water leak, excess condensation, etc.

**[0069]** In one embodiment, the sensor unit 102 is provided to a moisture sensor (such as the sensor 803) located near an air conditioning unit. Using data from the moisture sensor, the sensor unit 102 reports moisture conditions, such as, for example, excess moisture that would indicate a water leak, excess condensation, etc.

**[0070]** In one embodiment, the sensor 201 includes a moisture sensor. The moisture sensor can be place under a sink or a toilet (to detect plumbing leaks) or in an attic space (to detect roof leaks).

**[0071]** Excess humidity in a structure can cause severe problems such as rotting, growth of molds, mildew, and fungus, etc. (hereinafter referred to generically as fungus). In one embodiment, the sensor 201 includes a humidity sensor. The humidity sensor can be place under a sink, in an attic space, etc. to detect excess humidity (due to leaks, condensation, etc.). In one embodiment, the monitoring computer 113 compares humidity measurements taken from different sensor units in order to detect areas that have excess humidity. Thus for example, the monitoring computer 113 can compare the humidity readings from a first sensor unit 102 in a first attic area, to a humidity reading from a second sensor unit 102 in a second area. For example, the monitoring computer can take humidity readings from a number of attic areas to establish a baseline humidity reading and then compare the specific humidity readings from various sensor units to determine if one or more of the units are measuring excess humidity. The monitoring computer 113 would flag areas of excess humidity for further investigation by maintenance personnel. In one embodiment, the monitoring computer 113 maintains a history of humidity readings for various sensor units and flags areas that show an unexpected increase in humidity for investigation by maintenance personnel.

**[0072]** In one embodiment, the monitoring system 100 detects conditions favorable for fungus (e.g., mold, mildew, fungus, etc.) growth by using a first humidity sensor located in a first building area to produce first humidity data and a second humidity sensor located in a second building area to produce second humidity data. The building areas can be, for example, areas near a sink drain, plumbing fixture, plumbing, attic areas, outer walls, a bilge area in a boat, etc.

**[0073]** The monitoring station 113 collects humidity readings from the first humidity sensor and the second humidity sensor and indicates conditions favorable for fungus growth by comparing the first humidity data and the second humidity data. In one embodiment, the monitoring station 113 establishes a baseline humidity by comparing humidity readings from a plurality of humidity sensors and indicates possible fungus growth conditions in the first building area when at least a portion of the first humidity data exceeds the baseline humidity by a specified amount. In one embodiment, the monitoring station 113 establishes a baseline humidity by comparing humidity readings from a plurality of humidity sensors and indicates possible fungus growth conditions in the first building area when at least a portion of the first humidity data exceeds the baseline humidity by a specified percentage.

**[0074]** In one embodiment, the monitoring station 113 establishes a baseline humidity history by comparing humidity readings from a plurality of humidity sensors and indicates possible fungus growth conditions in the first building area when at least a portion of the first humidity data exceeds the baseline humidity history by a specified amount over a specified period of time. In one embodiment, the monitoring station 113 establishes a baseline humidity history by comparing humidity readings from a plurality of humidity sensors over a period of time and indicates possible fungus growth conditions in the first building area when at least a portion of the first humidity data exceeds the baseline humidity by a specified percentage of a specified period of time.

**[0075]** In one embodiment, the sensor unit 102 transmits humidity data when it determines that the humidity data fails a threshold test. In one embodiment, the humidity threshold for the threshold test is provided to the sensor unit 102 by the monitoring station 113. In one embodiment, the humidity threshold for the threshold test is computed by the monitoring station from a baseline humidity established in the monitoring station. In one embodiment, the baseline humidity is computed at least in part as an average of humidity readings from a number of humidity sensors. In one embodiment, the baseline humidity is computed at least in part as a

time average of humidity readings from a number of humidity sensors. In one embodiment, the baseline humidity is computed at least in part as a time average of humidity readings from a humidity sensor. In one embodiment, the baseline humidity is computed at least in part as the lesser of a maximum humidity reading an average of a number of humidity readings.

**[0076]** In one embodiment, the sensor unit 102 reports humidity readings in response to a query by the monitoring station 113. In one embodiment, the sensor unit 102 reports humidity readings at regular intervals. In one embodiment, a humidity interval is provided to the sensor unit 102 by the monitoring station 113.

**[0077]** In one embodiment, the calculation of conditions for fungus growth is comparing humidity readings from one or more humidity sensors to the baseline (or reference) humidity. In one embodiment, the comparison is based on comparing the humidity readings to a percentage (e.g., typically a percentage greater than 100%) of the baseline value. In one embodiment, the comparison is based on comparing the humidity readings to a specified delta value above the reference humidity. In one embodiment, the calculation of likelihood of conditions for fungus growth is based on a time history of humidity readings, such that the longer the favorable conditions exist, the greater the likelihood of fungus growth. In one embodiment, relatively high humidity readings over a period of time indicate a higher likelihood of fungus growth than relatively high humidity readings for short periods of time. In one embodiment, a relatively sudden increase in humidity as compared to a baseline or reference humidity is reported by the monitoring station 113 as a possibility of a water leak. If the relatively high humidity reading continues over time then the relatively high humidity is reported by the monitoring station 113 as possibly being a water leak and/or an area likely to have fungus growth or water damage.

**[0078]** Temperatures relatively more favorable to fungus growth increase the likelihood of fungus growth. In one embodiment, temperature measurements from the building areas are also used in the fungus grown-likelihood calculations. In one embodiment, a threshold value for likelihood of fungus growth is computed at least in part as a function of temperature, such that temperatures relatively more favorable to fungus growth result in a relatively lower threshold than temperatures relatively less favorable for fungus growth. In one embodiment, the calculation of a likelihood of fungus growth depends at least in part on temperature such that temperatures relatively more favorable to fungus growth indicate a relatively higher likelihood of fungus growth than temperatures relatively less favorable for fungus growth. Thus, in one

embodiment, a maximum humidity and/or minimum threshold above a reference humidity is relatively lower for temperature more favorable to fungus growth than the maximum humidity and/or minimum threshold above a reference humidity for temperatures relatively less favorable to fungus growth.

**[0079]** In one embodiment, a water flow sensor is provided to the sensor unit 102. The sensor unit 102 obtains water flow data from the water flow sensor and provides the water flow data to the monitoring computer 113. The monitoring computer 113 can then calculate water usage. Additionally, the monitoring computer can watch for water leaks, by, for example, looking for water flow when there should be little or no flow. Thus, for example, if the monitoring computer detects water usage throughout the night, the monitoring computer can raise an alert indicating that a possible water leak has occurred.

**[0080]** In one embodiment, the sensor 201 includes a water flow sensor is provided to the sensor unit 102. The sensor unit 102 obtains water flow data from the water flow sensor and provides the water flow data to the monitoring computer 113. The monitoring computer 113 can then calculate water usage. Additionally, the monitoring computer can watch for water leaks, by, for example, looking for water flow when there should be little or no flow. Thus, for example, if the monitoring computer detects water usage throughout the night, the monitoring computer can raise an alert indicating that a possible water leak has occurred.

**[0081]** In one embodiment, the sensor 201 includes a fire-extinguisher tamper sensor is provided to the sensor unit 102. The fire-extinguisher tamper sensor reports tampering with or use of a fire-extinguisher. In one embodiment the fire-extinguisher tamper sensor reports that the fire extinguisher has been removed from its mounting, that a fire extinguisher compartment has been opened, and/or that a safety lock on the fire extinguisher has been removed.

**[0082]** It will be evident to those skilled in the art that the invention is not limited to the details of the foregoing illustrated embodiments and that the present invention may be embodied in other specific forms without departing from the spirit or essential attributed thereof; furthermore, various omissions, substitutions and changes may be made without departing from the spirit of the inventions. For example, although specific embodiments are described in terms of the 900 MHz frequency band, one of ordinary skill in the art will recognize that frequency bands above and below 900 MHz can be used as well. The wireless system can be configured to operate on one or more frequency bands, such as, for example, the HF band, the VHF band, the UHF band,

the Microwave band, the Millimeter wave band, etc. One of ordinary skill in the art will further recognize that techniques other than spread spectrum can also be used and/or can be use instead spread spectrum. The modulation uses is not limited to any particular modulation method, such that modulation scheme used can be, for example, frequency modulation, phase modulation, amplitude modulation, combinations thereof, etc. The foregoing description of the embodiments is therefore to be considered in all respects as illustrative and not restrictive, with the scope of the invention being delineated by the appended claims and their equivalents.

WHAT IS CLAIMED IS:

1. A wireless ambient sensor unit, comprising:

a wireless transceiver;

a sensor configured to measure an ambient condition;

a controller in communication with the wireless transceiver and the sensor, the controller configured to:

compare data measured about the ambient condition to a stored threshold value while the wireless ambient sensor unit is in a low-power mode;

exit the low-power mode in response to the comparison of the data with the stored threshold value; and

transmit the data measured about the ambient condition as one or more messages, using the wireless transceiver, the data being transmitted while the wireless ambient sensor unit is out of the low-power mode and each message includes an address that identifies the wireless ambient sensor unit, a checksum, and an authenticity portion for use in verifying an authenticity of the message.

2. The wireless ambient sensor unit of claim 1, wherein the controller is further configured for at least a portion of the address to be programmed into the wireless ambient sensor unit during an installation process.

3. The wireless ambient sensor unit of claim 1, wherein power is not provided to the wireless transceiver in the low-power mode.

4. The wireless ambient sensor unit of claim 1, wherein the controller is further configured to:

receive a message, via the wireless transceiver to reprogram at least a portion of the address; and

reprogram at least the portion of the address based on the received message.

5. The wireless ambient sensor unit of claim 1, wherein the wireless transceiver is configured to use a spread spectrum technique for transmitting the data measured about the ambient condition.

6. The wireless ambient sensor unit of claim 1, wherein the controller is further configured to:

exit the low-power mode on a periodic basis;

transmit a status message using the wireless transceiver;

for a predefined period of time following the transmission of the status message, enter a receive mode to wait for a command to be received via the wireless transceiver; and

enter the low power mode following expiration of the predefined period of time.

7. The wireless ambient sensor unit of claim 1, wherein the ambient condition is one of a level of carbon monoxide or a level of smoke.

8. The wireless ambient sensor unit of claim 1, further comprising:

a reset switch in communication with the controller, and wherein the controller is further configured to:

in response to actuation of the reset switch, cause the wireless ambient sensor unit to enter a receive mode to receive the address, via the wireless transceiver, to program into the wireless ambient sensor unit.

9. The wireless ambient sensor unit of claim 1, further comprising:

a tamper sensor in communication with the controller, and wherein the controller is further configured to:

receive a tamper indication from the tamper sensor indicative of tampering with the wireless ambient sensor unit;

in response to the reception of the tamper indication, exit the low-power mode; and

transmit the a message including an indication of the tampering via the wireless transceiver.

10. The wireless ambient sensor unit of claim 1, further comprising an audio output device, and wherein the controller is in communication with the audio output device.

11. The wireless ambient sensor unit of claim 1, wherein the controller is further configured to:

measure a signal strength received using the wireless transceiver; and

route transmission of the one or more messages based on the measured signal strength.

12. The wireless ambient sensor unit of claim 1, wherein the controller is further configured to:

prior to the transmission of the one or more messages, listen to a radio frequency channel, using the wireless transceiver, to determine if the radio frequency channel is in use; and

in response to the determination that the radio frequency channel is not is use, transmit the one or more messages via the radio frequency channel.

13. A method for using a wireless ambient sensor unit, the method comprising:

measuring an ambient condition with a sensor of the wireless ambient sensor unit;

comparing data measured about the ambient condition to a stored threshold value while the wireless ambient sensor unit is in a low-power mode;

exiting the low-power mode in response to the comparison of the data with the stored threshold value; and

transmitting, with a wireless transceiver of the wireless ambient sensor unit, one or more messages indicative of the data measured about the ambient condition, the data being transmitted while the wireless ambient sensor unit is out of the low-power mode and each message including an address that identifies the wireless ambient sensor unit, a checksum, and an authenticity portion for use in verifying an authenticity of the message.

14. The method of claim 13, further comprising:

exiting the low-power mode on a periodic basis;

transmitting a status message using the wireless transceiver;

for a predefined period of time following said transmitting the status message, entering a receive mode to wait for a command to be received via the wireless transceiver; and

entering the low power mode following expiration of the predefined period of time.

15. The method of claim 13, wherein the ambient condition is one of a level of carbon monoxide or a level of smoke.

16. The method of claim 13, further comprising:

measuring a signal strength received using the wireless transceiver; and

routing transmission of the one or more messages based on the measured signal strength.

17. A system for sensing an ambient condition, the system comprising:

a wireless ambient sensor unit configured to:

measure the ambient condition with a sensor;

compare data measured about the ambient condition to a stored threshold value, while the wireless ambient sensor unit is in a low-power mode;

exit the low-power mode in response to the comparison of the data with the stored threshold value; and

transmit, with a wireless transceiver, one or more messages indicative of the data measured about the ambient condition, the data being transmitted while the wireless ambient sensor unit is out of the low-power mode and each message includes an address that identifies the wireless ambient sensor unit, a checksum, and an authenticity portion for use in verifying an authenticity of the message.

18. The system of claim 17, further comprising:

a repeater device configured to:

receive from the wireless ambient sensor unit, the one or more messages indicative of the data about the ambient condition; and

transmit the one or more messages to a base unit.

19. The system of claim 18, wherein the repeater device is further configured to:

attach an address of the repeater device to the one or more messages prior to the transmission of the one or more messages to the base unit.

20. The system of claim 18, wherein the repeater device is further configured to:

compare the address in the one or more messages received from the wireless ambient sensor unit to a stored database that includes a plurality of sensor addresses; and

ignore the one or more messages based on the address not being included in the plurality of sensor addresses.

ABSTRACT

Various embodiments of wireless ambient sensor unit are presented. The sensor unit may include a wireless transceiver configured to transmit sensor data and to receive instructions. The sensor unit may include a sensor configured to measure an ambient condition. The sensor unit may include a controller in communication with the wireless transceiver and the sensor. The controller may be configured to compare data measured about the ambient condition to a stored threshold while the wireless ambient sensor unit is functioning in a low-power mode. The controller may be configured to exit the low-power mode in response to the comparison of the data with the stored threshold. The controller may be configured to cause the data measured about the ambient condition to be transmitted by the wireless transceiver as one or more messages in response to the comparison to the stored threshold.

## PATENT APPLICATION FEE DETERMINATION RECORD
Substitute for Form PTO-875

Application or Docket Number: 15/090,973

### APPLICATION AS FILED - PART I

| FOR | (Column 1) NUMBER FILED | (Column 2) NUMBER EXTRA | SMALL ENTITY RATE($) | SMALL ENTITY FEE($) | OR | OTHER THAN SMALL ENTITY RATE($) | OTHER THAN SMALL ENTITY FEE($) |
|---|---|---|---|---|---|---|---|
| BASIC FEE (37 CFR 1.16(a), (b), or (c)) | N/A | N/A | N/A | | | N/A | 280 |
| SEARCH FEE (37 CFR 1.16(k), (i), or (m)) | N/A | N/A | N/A | | | N/A | 600 |
| EXAMINATION FEE (37 CFR 1.16(o), (p), or (q)) | N/A | N/A | N/A | | | N/A | 720 |
| TOTAL CLAIMS (37 CFR 1.16(i)) | 20 minus 20 = | * | | | OR | x 80 = | 0.00 |
| INDEPENDENT CLAIMS (37 CFR 1.16(h)) | 3 minus 3 = | * | | | | x 420 = | 0.00 |
| APPLICATION SIZE FEE (37 CFR 1.16(s)) | If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). | | | | | | 0.00 |
| MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) | | | | | | | 0.00 |
| * If the difference in column 1 is less than zero, enter "0" in column 2. | | | TOTAL | | | TOTAL | 1600 |

### APPLICATION AS AMENDED - PART II

| | | (Column 1) CLAIMS REMAINING AFTER AMENDMENT | | (Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR | (Column 3) PRESENT EXTRA | SMALL ENTITY RATE($) | SMALL ENTITY ADDITIONAL FEE($) | OR | OTHER THAN SMALL ENTITY RATE($) | OTHER THAN SMALL ENTITY ADDITIONAL FEE($) |
|---|---|---|---|---|---|---|---|---|---|---|
| AMENDMENT A | Total (37 CFR 1.16(i)) | * | Minus | ** | = | x = | | OR | x = | |
| | Independent (37 CFR 1.16(h)) | * | Minus | *** | = | x = | | OR | x = | |
| | Application Size Fee (37 CFR 1.16(s)) | | | | | | | | | |
| | FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | OR | | |
| | | | | | | TOTAL ADD'L FEE | | OR | TOTAL ADD'L FEE | |

| | | (Column 1) CLAIMS REMAINING AFTER AMENDMENT | | (Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR | (Column 3) PRESENT EXTRA | RATE($) | ADDITIONAL FEE($) | | RATE($) | ADDITIONAL FEE($) |
|---|---|---|---|---|---|---|---|---|---|---|
| AMENDMENT B | Total (37 CFR 1.16(i)) | * | Minus | ** | = | x = | | OR | x = | |
| | Independent (37 CFR 1.16(h)) | * | Minus | *** | = | x = | | OR | x = | |
| | Application Size Fee (37 CFR 1.16(s)) | | | | | | | | | |
| | FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | OR | | |
| | | | | | | TOTAL ADD'L FEE | | OR | TOTAL ADD'L FEE | |

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

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| APPLICATION NUMBER | FILING or 371(c) DATE | GRP ART UNIT | FIL FEE REC'D | ATTY.DOCKET.NO | TOT CLAIMS | IND CLAIMS |
|---|---|---|---|---|---|---|
| 15/090,973 | 04/05/2016 | 2684 | 1600 | 563800USCON11 | 20 | 3 |

**CONFIRMATION NO. 5338**

**FILING RECEIPT**

124746
Wolfe-SBMC
601 W. Main Ave
Suite 1300
Spokane, WA 99201

OC000000082324795

Date Mailed: 04/21/2016

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

**Inventor(s)**

Lawrence Kates, Corona Del Mar, CA;

**Applicant(s)**

Google Inc., Mountain View, CA;

**Assignment For Published Patent Application**

Google Inc., Mountain View, CA

**Power of Attorney:** The patent practitioners associated with Customer Number 124746

**Domestic Priority data as claimed by applicant**

This application is a CON of 14/548,137 11/19/2014 PAT 9318015
which is a CON of 14/168,876 01/30/2014
which is a CON of 12/905,248 10/15/2010 ABN
which is a CON of 12/482,079 06/10/2009 PAT 8620781 *
which is a DIV of 11/562,313 11/21/2006 PAT 7411494
which is a CON of 10/856,231 05/27/2004 PAT 7142107
(*)Data provided by applicant is not consistent with PTO records.

**Foreign Applications** for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
*Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.*

**Permission to Access Application via Priority Document Exchange:** Yes

**Permission to Access Search Results:** Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

**If Required, Foreign Filing License Granted:** 04/20/2016

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 15/090,973**

**Projected Publication Date:** 07/28/2016

**Non-Publication Request:** No

**Early Publication Request:** No

**Title**

Wireless Sensor Unit Communication Triggering and Management

**Preliminary Class**

340

**Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications:** Yes

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## Title 37, Code of Federal Regulations, 5.11 & 5.15

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| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | **Application Number** | 15/090,973 |
| | **Filing Date** | Apr 5, 2016 |
| | **First Named Inventor** | Lawrence Kates |
| | **Art Unit** | 2686 |
| | **Examiner Name** | Unknown |
| | **Attorney Docket Number** | 563800USCON11 |

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| | **Application Number** | 15/090,973 |
| | **Filing Date** | Apr 5, 2016 |
| | **First Named Inventor** | Lawrence Kates |
| | **Art Unit** | 2686 |
| | **Examiner Name** | Unknown |
| | **Attorney Docket Number** | 563800USCON11 |

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| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | **Application Number** | 15/090,973 |
| | **Filing Date** | Apr 5, 2016 |
| | **First Named Inventor** | Lawrence Kates |
| | **Art Unit** | 2686 |
| | **Examiner Name** | Unknown |
| | **Attorney Docket Number** | 563800USCON11 |

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| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | **Application Number** | 15/090,973 |
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| | **First Named Inventor** | Lawrence Kates |
| | **Art Unit** | 2686 |
| | **Examiner Name** | Unknown |
| | **Attorney Docket Number** | 563800USCON11 |

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| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | **Application Number** | 15/090,973 |
| | **Filing Date** | Apr 5, 2016 |
| | **First Named Inventor** | Lawrence Kates |
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| | **Examiner Name** | Unknown |
| | **Attorney Docket Number** | 563800USCON11 |

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| | **Application Number** | 15/090,973 |
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| | "Notice of Allowance", Application Number 14/339,234, 10/27/2015, 9 pages |
| | "Notice of Allowance", Application Number 14/548,137, 12/10/2015, 5 pages |
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| | **First Named Inventor** | Lawrence Kates |
| | **Art Unit** | 2686 |
| | **Examiner Name** | Unknown |
| | **Attorney Docket Number** | 563800USCON11 |

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**EXAMINER SIGNATURE**

| | | | |
|---|---|---|---|
| Examiner Signature | | Date Considered | |

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

# Electronic Acknowledgement Receipt

| | |
|---|---|
| **EFS ID:** | 25687800 |
| **Application Number:** | 15090973 |
| **International Application Number:** | |
| **Confirmation Number:** | 5338 |
| **Title of Invention:** | Wireless Sensor Unit Communication Triggering and Management |
| **First Named Inventor/Applicant Name:** | Lawrence Kates |
| **Customer Number:** | 124746 |
| **Filer:** | David Anthony Morasch/Kenneth Linder |
| **Filer Authorized By:** | David Anthony Morasch |
| **Attorney Docket Number:** | 563800USCON11 |
| **Receipt Date:** | 04-MAY-2016 |
| **Filing Date:** | 05-APR-2016 |
| **Time Stamp:** | 17:49:08 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | no |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | | 563800USCON11IDS.pdf | 260618<br>d4f8eba7b5c81394c52e4dec95ceaedeaff47d4a | yes | 18 |

| | Multipart Description/PDF files in .zip description | | |
|---|---|---|---|
| | **Document Description** | **Start** | **End** |
| | Transmittal Letter | 1 | 2 |
| | Information Disclosure Statement (IDS) Form (SB08) | 3 | 18 |
| **Warnings:** | | | |
| **Information:** | | | |
| | **Total Files Size (in bytes):** | 260618 | |

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**New Applications Under 35 U.S.C. 111**
**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**
**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**
**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

| | | | |
|---|---|---|---|
| Applicant: | Lawrence Kates | Examiner: | Unknown |
| Serial No.: | 15/090,973 | Group Art Unit: | 2686 |
| Filed: | April 5, 2016 | Docket: | 563800USCON11 |
| Title: | Wireless Sensor Unit Communication Triggering and Management | | |

## SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

In compliance with the duty imposed by 37 C.F.R. § 1.56, and in accordance with 37 C.F.R. §§ 1.97 *et. seq.*, the referenced materials are brought to the attention of the Examiner for consideration in connection with the above-identified patent application. Applicants respectfully request that this Supplemental Information Disclosure Statement be entered and the documents listed on the attached Form 1449 be considered by the Examiner and made of record. Pursuant to the provisions of MPEP 609, Applicants request that a copy of the 1449 form, initialed as being considered by the Examiner, be returned to the Applicants with the next official communication.

Pursuant to 37 C.F.R. § 1.97(b), it is believed that no fee or statement is required with the Supplemental Information Disclosure Statement. However, if an Office Action on the merits has been mailed, the Commissioner is hereby authorized to charge the required fees to Deposit Account No. 50-4143 in order to have this Supplemental Information Disclosure Statement considered.

Pursuant to 37 C.F.R. § 1.98(d), copies of the listed documents are not provided as these references were previously cited by or submitted to the U.S. Patent Office in connection with Applicants' prior U.S. application, Serial No. 14/548,137, filed on Nov 19, 2014, which is relied upon for an earlier filing date under 35 U.S.C. § 120.

Respectfully submitted,

Lawrence Kates

By their Representatives,

Date May 4, 2016

By /Matthew Johnson/
Matthew Johnson
Reg. No. 72,299

UNITED STATES PATENT AND TRADEMARK OFFICE

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| APPLICATION NUMBER | FILING or 371(c) DATE | GRP ART UNIT | FIL FEE REC'D | ATTY.DOCKET.NO | TOT CLAIMS | IND CLAIMS |
|---|---|---|---|---|---|---|
| 15/090,973 | 04/05/2016 | 2684 | 1600 | 563800USCON11 | 20 | 3 |

**CONFIRMATION NO. 5338**

**FILING RECEIPT**

124746
Wolfe-SBMC
601 W. Main Ave
Suite 1300
Spokane, WA 99201

OC000000082324795

Date Mailed: 04/21/2016

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

**Inventor(s)**

Lawrence Kates, Corona Del Mar, CA;

**Applicant(s)**

Google Inc., Mountain View, CA;

**Assignment For Published Patent Application**

Google Inc., Mountain View, CA

**Power of Attorney:** The patent practitioners associated with Customer Number 124746

**Domestic Priority data as claimed by applicant**

This application is a CON of 14/548,137 11/19/2014 PAT 9318015
which is a CON of 14/168,876 01/30/2014 which is a CON of 12/182,079 07/29/2008 PAT 7817031
which is a CON of 12/905,248 10/15/2010 ABN
~~which is a CON of 12/482,079 06/10/2009 PAT 8620781 *~~
which is a DIV of 11/562,313 11/21/2006 PAT 7411494
which is a CON of 10/856,231 05/27/2004 PAT 7142107
(*)Data provided by applicant is not consistent with PTO records.

**Foreign Applications** for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
*Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.*

**Permission to Access Application via Priority Document Exchange:** Yes

**Permission to Access Search Results:** Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

**If Required, Foreign Filing License Granted:** 04/20/2016

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 15/090,973**

**Projected Publication Date:** 07/28/2016

**Non-Publication Request:** No

**Early Publication Request:** No

**Title**

Wireless Sensor Unit Communication Triggering and Management

**Preliminary Class**

340

**Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications:** Yes

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Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

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|---|---|
| **EFS ID:** | 25705207 |
| **Application Number:** | 15090973 |
| **International Application Number:** | |
| **Confirmation Number:** | 5338 |
| **Title of Invention:** | Wireless Sensor Unit Communication Triggering and Management |
| **First Named Inventor/Applicant Name:** | Lawrence Kates |
| **Customer Number:** | 124746 |
| **Filer:** | William Breen/Whitney Soule |
| **Filer Authorized By:** | William Breen |
| **Attorney Docket Number:** | 563800USCON11 |
| **Receipt Date:** | 06-MAY-2016 |
| **Filing Date:** | 05-APR-2016 |
| **Time Stamp:** | 13:15:36 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| Submitted with Payment | no |
|---|---|

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Application Data Sheet | 563800USCON11_Supp_AppDataSheet.pdf | 515061<br>ca26fd9dc869f45c86710ce0fdfae3ba69c908b3 | no | 9 |

| Warnings: |
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**New Applications Under 35 U.S.C. 111**
**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

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**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE


| Application Data Sheet 37 CFR 1.76 | Attorney Docket Number | 563800USCON11 |
|---|---|---|
| | Application Number | 15/090,973 |
| Title of Invention | Wireless Sensor Unit Communication Triggering and Management | |

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

## Secrecy Order 37 CFR 5.2:

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

## Inventor Information:

**Inventor 1** Remove

**Legal Name**

| Prefix | Given Name | Middle Name | Family Name | Suffix |
|---|---|---|---|---|
| | Lawrence | | Kates | |

**Residence Information (Select One)** ◉ US Residency ○ Non US Residency ○ Active US Military Service

| City | Corona Del Mar | State/Province | CA | Country of Residence | US |
|---|---|---|---|---|---|

**Mailing Address of Inventor:**

| Address 1 | c/o Google Inc. | | |
|---|---|---|---|
| Address 2 | 1600 Amphitheatre Parkway | | |
| City | Mountain View | State/Province | CA |
| Postal Code | 94043 | Country | US |

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

## Correspondence Information:

**Enter either Customer Number or complete the Correspondence Information section below.**
**For further information see 37 CFR 1.33(a).**

☐ **An Address is being provided for the correspondence Information of this application.**

| Customer Number | 124746 | | |
|---|---|---|---|
| Email Address | docket@sbmc-law.com | Add Email | Remove Email |

## Application Information:

| Title of the Invention | Wireless Sensor Unit Communication Triggering and Management | | |
|---|---|---|---|
| Attorney Docket Number | 563800USCON11 | Small Entity Status Claimed | ☐ |
| Application Type | Nonprovisional | | |
| Subject Matter | Utility | | |
| Total Number of Drawing Sheets (if any) | 7 | Suggested Figure for Publication (if any) | 1 |

PTO/AIA/14 (11-15)
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| Application Data Sheet 37 CFR 1.76 | Attorney Docket Number | 563800USCON11 |
|---|---|---|
| | Application Number | 15/090,973 |
| Title of Invention | Wireless Sensor Unit Communication Triggering and Management | |

## Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

| Application number of the previously filed application | Filing date (YYYY-MM-DD) | Intellectual Property Authority or Country |
|---|---|---|
| | | |

## Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

## Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

| Please Select One: | ◉ Customer Number | ○ US Patent Practitioner | ○ Limited Recognition (37 CFR 11.9) |
|---|---|---|---|
| Customer Number | | | |

## Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.
When referring to the current application, please leave the "Application Number" field blank.

| Prior Application Status | Pending | | Remove |
|---|---|---|---|
| Application Number | Continuity Type | Prior Application Number | Filing or 371(c) Date (YYYY-MM-DD) |
| 15/090,973 | Continuation of | 14548137 | 2014-11-19 |

| Application Data Sheet 37 CFR 1.76 | Attorney Docket Number | 563800USCON11 |
|---|---|---|
| | Application Number | 15/090,973 |
| Title of Invention | Wireless Sensor Unit Communication Triggering and Management | |

| Prior Application Status | Pending | | Remove |
|---|---|---|---|
| Application Number | Continuity Type | Prior Application Number | Filing or 371(c) Date (YYYY-MM-DD) |
| 14548137 | Continuation of | 14168876 | 2014-01-30 |
| Prior Application Status | Abandoned | | Remove |
| Application Number | Continuity Type | Prior Application Number | Filing or 371(c) Date (YYYY-MM-DD) |
| 14168876 | Continuation of | 12905248 | 2010-10-15 |
| Prior Application Status | Patented | | Remove |

| Application Number | Continuity Type | Prior Application Number | Filing Date (YYYY-MM-DD) | Patent Number | Issue Date (YYYY-MM-DD) |
|---|---|---|---|---|---|
| 12905248 | Continuation of | ~~12482079~~ | 2008-07-29 | 7817031 | 2010-10-19 |
| Prior Application Status | Patented | 12/182,079 | | Remove | |
| Application Number | Continuity Type | Prior Application Number | Filing Date (YYYY-MM-DD) | Patent Number | Issue Date (YYYY-MM-DD) |
| ~~12482079~~ | Division of | 11562313 | 2006-11-21 | 7411494 | 2008-08-12 |
| Prior Application Status | Patented | | | Remove | |
| Application Number | Continuity Type | Prior Application Number | Filing Date (YYYY-MM-DD) | Patent Number | Issue Date (YYYY-MM-DD) |
| 11562313 | Continuation of | 10856231 | 2004-05-27 | 7142107 | 2006-11-28 |

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button.

12/182,079

## Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)[i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Remove

| Application Number | Country[i] | Filing Date (YYYY-MM-DD) | Access Code[i] (if applicable) |
|---|---|---|---|
| | | | |

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

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| Application Data Sheet 37 CFR 1.76 | Attorney Docket Number | 563800USCON11 |
|---|---|---|
| | Application Number | 15/090,973 |
| Title of Invention | Wireless Sensor Unit Communication Triggering and Management | |

## Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☒ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

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| Application Data Sheet 37 CFR 1.76 | Attorney Docket Number | 563800USCON11 |
|---|---|---|
| | Application Number | 15/090,973 |
| Title of Invention | Wireless Sensor Unit Communication Triggering and Management | |

## Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

**NOTE**: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

**1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)**

**A. Priority Document Exchange (PDX)** - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

**B. Search Results from U.S. Application to EPO** - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

**2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)**

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

**NOTE:** Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

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| Application Data Sheet 37 CFR 1.76 | Attorney Docket Number | 563800USCON11 |
|---|---|---|
| | Application Number | 15/090,973 |
| Title of Invention | Wireless Sensor Unit Communication Triggering and Management | |

## Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

**Applicant 1**

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

| | | |
|---|---|---|
| ◉ Assignee | ○ Legal Representative under 35 U.S.C. 117 | ○ Joint Inventor |
| ○ Person to whom the inventor is obligated to assign. | ○ Person who shows sufficient proprietary interest | |

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor:

If the Applicant is an Organization check here. ☒

| Organization Name | Google Inc. |
|---|---|

**Mailing Address Information For Applicant:**

| | | | |
|---|---|---|---|
| **Address 1** | 1600 Amphitheatre Parkway | | |
| Address 2 | | | |
| **City** | Mountain View | **State/Province** | CA |
| **Country** | US | Postal Code | 94043 |
| Phone Number | | Fax Number | |
| Email Address | | | |

Additional Applicant Data may be generated within this form by selecting the Add button.

## Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE


| Application Data Sheet 37 CFR 1.76 | Attorney Docket Number | 563800USCON11 |
|---|---|---|
| | Application Number | 15/090,973 |
| Title of Invention | Wireless Sensor Unit Communication Triggering and Management | |

**Assignee 1**

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

If the Assignee or Non-Applicant Assignee is an Organization check here. ☒

| Organization Name | Google Inc. |
|---|---|

**Mailing Address Information For Assignee including Non-Applicant Assignee:**

| | | | |
|---|---|---|---|
| **Address 1** | 1600 Amphitheatre Parkway | | |
| Address 2 | | | |
| **City** | Mountain View | **State/Province** | CA |
| **Country** | US | Postal Code | 94043 |
| Phone Number | | Fax Number | |
| Email Address | | | |

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.

## Signature:

**NOTE:** This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). **However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).**

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

| **Signature** | /Matthew Johnson/ | | | Date (YYYY-MM-DD) | 2016-05-06 |
|---|---|---|---|---|---|
| First Name | Matthew | Last Name | Johnson | Registration Number | 72299 |

Additional Signature may be generated within this form by selecting the Add button.

PTO/AIA/14 (11-15)
Approved for use through 04/30/2017. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE


| **Application Data Sheet 37 CFR 1.76** | Attorney Docket Number | 563800USCON11 |
|---|---|---|
| | Application Number | 15/090,973 |
| Title of Invention | Wireless Sensor Unit Communication Triggering and Management | |

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

# Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1 The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3 A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent CooperationTreaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NUMBER | FILING or 371(c) DATE | GRP ART UNIT | FIL FEE REC'D | ATTY.DOCKET.NO | TOT CLAIMS | IND CLAIMS |
|---|---|---|---|---|---|---|
| 15/090,973 | 04/05/2016 | 2685 | 1600 | 563800USCON11 | 20 | 3 |

**CONFIRMATION NO. 5338**

**CORRECTED FILING RECEIPT**

124746
Wolfe-SBMC
601 W. Main Ave
Suite 1300
Spokane, WA 99201


Date Mailed: 05/16/2016

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

**Inventor(s)**

Lawrence Kates, Corona Del Mar, CA;

**Applicant(s)**

Google Inc., Mountain View, CA;

**Assignment For Published Patent Application**

Google Inc., Mountain View, CA

**Power of Attorney:** The patent practitioners associated with Customer Number 124746

**Domestic Priority data as claimed by applicant**

This application is a CON of 14/548,137 11/19/2014 PAT 9318015
which is a CON of 14/168,876 01/30/2014 PAT 9357490
which is a CON of 12/905,248 10/15/2010 ABN
which is a CON of 12/182,079 07/29/2008 PAT 7817031
which is a DIV of 11/562,313 11/21/2006 PAT 7411494
which is a CON of 10/856,231 05/27/2004 PAT 7142107

**Foreign Applications** for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
*Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.*

**Permission to Access Application via Priority Document Exchange:** Yes

**Permission to Access Search Results:** Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

**If Required, Foreign Filing License Granted:** 04/20/2016

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 15/090,973**

**Projected Publication Date:** 08/25/2016

**Non-Publication Request:** No

**Early Publication Request:** No

**Title**

Wireless Sensor Unit Communication Triggering and Management

**Preliminary Class**

340

**Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications:** Yes

## PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific

countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

## LICENSE FOR FOREIGN FILING UNDER

## Title 35, United States Code, Section 184

## Title 37, Code of Federal Regulations, 5.11 & 5.15

**GRANTED**

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

**NOT GRANTED**

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 15/090,973 | 04/05/2016 | Lawrence Kates | 563800USCON11 | 5338 |

124746 7590 06/15/2016

Wolfe-SBMC
601 W. Main Ave
Suite 1300
Spokane, WA 99201

| EXAMINER | |
|---|---|
| NWUGO, OJIAKO K | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2685 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 06/15/2016 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docket@sbmc-law.com

| Office Action Summary | Application No. 15/090,973 | Applicant(s) KATES, LAWRENCE | |
|---|---|---|---|
| | Examiner OJIAKO NWUGO | Art Unit 2685 | AIA (First Inventor to File) Status Yes |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *4/8/2016*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims***

5)☒ Claim(s) *1-20* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-20* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

**Application Papers**

10)☐ The specification is objected to by the Examiner.

11)☒ The drawing(s) filed on *4/5/2016* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

**Certified copies:**

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102 of this title, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103 are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claim 1-8, 10, 12-15, 17** are rejected under 35 U.S.C. 103 as being unpatentable over Hakanen US20020030592 in view of Marman US6624750 in view of Agrawal US20020124169.

Regarding **Claim 1**, Hakanen discloses in fig. 2 and ¶s55-57 A wireless ambient sensor unit (system 2 of fig. 1 and ¶23), comprising: a wireless transceiver (transceiver 16 of ¶s35, 37); a sensor (sensor 20, 22, 24, 26) configured to measure an ambient

condition; a controller (CPU 14) in communication with the wireless transceiver and the sensor, the controller configured to: compare data measured about the ambient condition to a stored threshold value while the wireless ambient sensor unit is in a low-power mode; exit the low-power mode in response to the comparison of the data with the stored threshold value (¶32 in view of ¶s55-57); and transmit the data measured (operational parameters of ¶36 in view of ¶4) about the ambient condition as one or more messages, using the wireless transceiver, the data being transmitted while the wireless ambient sensor unit is out of the low-power mode (¶32 in view of ¶s55-57).

Hakanen fails to disclose each message includes an address that identifies the wireless ambient sensor unit.

However Marman discloses in fig. 2 and col.20:36-41 each message includes an address that identifies the wireless ambient sensor unit.

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to include the address of Marman into Hakanen for the purpose of identifying form a given communication device to facilitate message processing.

Further Hakanen and Marman fail to disclose message includes a checksum, and an authenticity portion for use in verifying an authenticity of the message.

However, Agrawal discloses in figs. 7, 8 and ¶61 message includes a checksum, and an authenticity portion for use in verifying an authenticity of the message.

Therefore, it would have been obvious for one of ordinary skill in that art at the time of the invention features of Agrawal in view of Hakanen and Marman to enhance system security.

Regarding **Claim 2**, Marman discloses in fig. 2 and col.24:11-24 wherein the controller is further configured for at least a portion of the address to be programmed into the wireless ambient sensor unit during an installation process.

Regarding **Claim 3**, Marman discloses in fig. 2 and col. 28:20-27 wherein power is not provided to the wireless transceiver in the low-power mode.

Regarding **Claim 4**, Marman discloses in fig. 2 and col.24:11-24 wherein the controller is further configured to: receive a message, via the wireless transceiver to reprogram at least a portion of the address; and reprogram at least the portion of the address based on the received message.

Regarding **Claim 5**, Marman discloses in fig. 2 and col.21:45-col.22:24 wherein the wireless transceiver is configured to use a spread spectrum technique for transmitting the data measured about the ambient condition.

Regarding **Claim 6**, Hanaken discloses in ¶56 wherein the controller is further configured to: exit the low-power mode on a periodic basis; transmit a status message using the wireless transceiver; for a predefined period of time following the transmission of the status message, enter a receive mode to wait for a command to be received via the wireless transceiver; and enter the low power mode following expiration of the predefined period of time.

Regarding **Claim 7**, Marman discloses in fig. 2 and col.7:65-col.8:8 wherein the ambient condition is one of a level of carbon monoxide or a level of smoke.

Regarding **Claim 8**, Marman discloses in fig. 2 and col.12:35-45 further comprising: a reset switch in communication with the controller, and wherein the

controller is further configured to: in response to actuation of the reset switch, cause the wireless ambient sensor unit to enter a receive mode to receive the address, via the wireless transceiver, to program into the wireless ambient sensor unit.

Regarding **Claim 10**, Marman discloses in figs. 5a, 5b and col. 10:27-26 further comprising an audio output device, and wherein the controller is in communication with the audio output device.

Regarding **Claim 12**, Marman discloses in fig. 2 and col.21:45-col.22:24 wherein the controller is further configured to: prior to the transmission of the one or more messages, listen to a radio frequency channel, using the wireless transceiver, to determine if the radio frequency channel is in use; and in response to the determination that the radio frequency channel is not is use, transmit the one or more messages via the radio frequency channel.

Regarding **Claim 13**, the limitations are analogous to the limitation of **claim 1** and is rejected on similar grounds.

Regarding **Claim 14**, Hanaken discloses in ¶56 exiting the low-power mode on a periodic basis; transmitting a status message using the wireless transceiver; for a predefined period of time following said transmitting the status message, entering a receive mode to wait for a command to be received via the wireless transceiver; and entering the low power mode following expiration of the predefined period of time.

Regarding **Claim 15**, Marman discloses in fig. 2 and col.7:65-col.8:8 wherein the ambient condition is one of a level of carbon monoxide or a level of smoke.

Regarding **Claim 17**, the limitations are analogous to the limitation of **claim 1** and is rejected on similar grounds.

**Claim 9** is rejected under 35 U.S.C. 103 as being unpatentable over Hakanen, Marman and Agrawal as applied to **claim 1** above in view of Wolfe US20050030175.

Regarding **Claim 9,** Hakanen discloses in fig. 1 and ¶s 28, 32, 55-57 sensor with the controller, and wherein the controller is further configured to: receive a tamper indication from the tamper sensor indicative of tampering with the wireless ambient sensor unit; in response to the reception of the tamper indication, exit the low-power mode; and transmit the a message including an indication of the tampering via the wireless transceiver.

Hakanen, Marman and Agrawal fail to disclose a tamper senor.
However Wolfe discloses in fig. 1 and ¶42 tamper sensor,

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to include tamper sensor of Wolfe into Hakanen, Marman and Agrawal to enhance system robustness.

**Claim 11, 16, 17-20** are rejected under 35 U.S.C. 103 as being unpatentable over Hakanen, Marman and Agrawal as applied to **claim 1, 13, 18** above in view of Gutierrez US2040233855.

Regarding **Claim 11**, Hakanen, Marman and Agrawal fail to disclose wherein the controller is further configured to: measure a signal strength received using the wireless

transceiver; and route transmission of the one or more messages based on the measured signal strength.

However Gutierrez's disclosure in fig. 6 and ¶s85-86 renders obvious wherein the controller is further configured to: measure a signal strength received using the wireless transceiver; and route transmission of the one or more messages based on the measured signal strength.

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to include features of Guteirrez into Hakanen, Marman and Agrawal to enhance system robustness.

**Claim 16** is rejected on similar grounds as **claim 11**.

Regarding **Claim 18**, Hakanen, Marman and Agrawal fail to disclose a repeater device configured to: receive from the wireless ambient sensor unit, the one or more messages indicative of the data about the ambient condition; and transmit the one or more messages to a base unit.

However, Gutierrez's disclosures in fig. 5 and ¶s84-85 renders obvious a repeater device (ND 14) configured to: receive from the wireless ambient sensor unit, the one or more messages indicative of the data about the ambient condition; and transmit the one or more messages to a base unit (NCO 24).

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to include features of Guteirrez into Hakanen, Marman and Agrawal to enhance system robustness.

Regarding **Claim 19**, Gutierrez's disclosures in fig. 5 and ¶s84-85 renders obvious wherein the repeater device is further configured to: attach an address of the repeater device to the one or more messages prior to the transmission of the one or more messages to the base unit.

Regarding **Claim 20**, Gutierrez's disclosures in fig. 5 and ¶s84-85 renders obvious wherein the repeater device is further configured to: compare the address in the one or more messages received from the wireless ambient sensor unit to a stored database that includes a plurality of sensor addresses; and ignore the one or more messages based on the address not being included in the plurality of sensor addresses.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OJIAKO NWUGO whose telephone number is (571)272-9755. The examiner can normally be reached on 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, HAI PHAN can be reached on 5712726338. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/OJIAKO NWUGO/
Primary Examiner, Art Unit 2685

| Notice of References Cited | Application/Control No. 15/090,973 | Applicant(s)/Patent Under Reexamination KATES, LAWRENCE | |
|---|---|---|---|
| | Examiner OJIAKO NWUGO | Art Unit 2685 | Page 1 of 2 |

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Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

| Notice of References Cited | Application/Control No. 15/090,973 | Applicant(s)/Patent Under Reexamination KATES, LAWRENCE | |
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| | Examiner OJIAKO NWUGO | Art Unit 2685 | Page 2 of 2 |

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# BIB DATA SHEET

**CONFIRMATION NO. 5338**

| SERIAL NUMBER | FILING or 371(c) DATE<br>RULE | CLASS | GROUP ART UNIT | ATTORNEY DOCKET NO. |
|---|---|---|---|---|
| 15/090,973 | 04/05/2016 | 340 | 2685 | 563800USCON11 |

**APPLICANTS**
Google Inc., Mountain View, CA;

**INVENTORS**
Lawrence Kates, Corona Del Mar, CA;

**** CONTINUING DATA **************************
This application is a CON of 14/548,137 11/19/2014 PAT 9318015
which is a CON of 14/168,876 01/30/2014 PAT 9357490
which is a CON of 12/905,248 10/15/2010 ABN
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which is a DIV of 11/562,313 11/21/2006 PAT 7411494
which is a CON of 10/856,231 05/27/2004 PAT 7142107

**** FOREIGN APPLICATIONS **************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ****
04/20/2016

| Foreign Priority claimed ☐ Yes ☑ No<br>35 USC 119(a-d) conditions met ☐ Yes ☑ No<br>Verified and Acknowledged /OJIAKO K NWUGO/ Examiner's Signature | ☐ Met after Allowance<br>OKN Initials | STATE OR COUNTRY | SHEETS DRAWINGS | TOTAL CLAIMS | INDEPENDENT CLAIMS |
|---|---|---|---|---|---|
| | | CA | 7 | 20 | 3 |

**ADDRESS**
Wolfe-SBMC
601 W. Main Ave
Suite 1300
Spokane, WA 99201
UNITED STATES

**TITLE**
Wireless Sensor Unit Communication Triggering and Management

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| Search Notes | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 15090973 | KATES, LAWRENCE |
| | Examiner | Art Unit |
| | OJIAKO NWUGO | 2685 |

| CPC- SEARCHED | | |
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| Symbol | Date | Examiner |
| G08B1/08 G06F1/3209 G08B17/00 G08B25/009 G08B25/001 G08B17/10 G08B25/10 with text | 6/8/2016 | O.N. |

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| US CLASSIFICATION SEARCHED | | | |
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| 340 | 573.1,870.39 with text | 6/8/2016 | O.N. |

| SEARCH NOTES | | |
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| Search Notes | Date | Examiner |
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| INTERFERENCE SEARCH | | | |
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| | /OJIAKO NWUGO/<br>Primary Examiner.Art Unit 2685 |

| Index of Claims | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 15090973 | KATES, LAWRENCE |
| | Examiner | Art Unit |
| | OJIAKO NWUGO | 2685 |

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☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

| CLAIM | | DATE | | | | | | | | |
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| Final | Original | 06/08/2016 | | | | | | | | |
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**EAST Search History**

**EAST Search History (Prior Art)**

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|---|---|---|---|---|---|---|
| S1 | 17 | (Kates near3 lawrence).inv. and @ad<="20040527" | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/20 15:35 |
| S2 | 11 | (Kates near3 lawrence).inv. and low near power near3 mode and @ad<="20040527" | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/20 15:36 |
| S3 | 1 | ("20140203943" "20110025501" "20080278316" "20070090946" "20050275528").pn. and low near power near3 mode and @ad<="20040527" | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/20 15:43 |
| S4 | 232 | (sensor$1 detector$1) and (low near power near3 mode with (transmit transmission)) and @ad<="20040527" | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/20 15:45 |
| S5 | 10 | (sensor$1 detector$1) and (low near power near3 mode with (transmit transmission)) with threshold and @ad<="20040527" | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/20 15:46 |
| S6 | 0 | (09/194809).APP. | US-PGPUB; USOCR | OR | OFF | 2015/02/20 15:48 |
| S7 | 31 | (sensor$1 detector$1) and (((low near power near3 mode) (sleep)) with (transmit transmission)) with threshold and @ad<="20040527" | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/20 15:50 |
| S8 | 0 | (G08B1/08 G06F1/3209 G08B17/00 G08B25/009 G08B25/001 G08B17/10 G08B25/10).pn. and low near power near3 mode and @ad<="20040527" | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; | OR | OFF | 2015/02/20 16:05 |

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| | | | IBM_TDB | | | |
| S9 | 0 | (G08B1/08 G06F1/3209 G08B17/00 G08B25/009 G08B25/001 G08B17/10 G08B25/10).pn. and @ad<="20040527" | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/20 16:06 |
| S10 | 137 | (G08B1/08 G06F1/3209 G08B17/00 G08B25/009 G08B25/001 G08B17/10 G08B25/10).cpc. and low near power near3 mode and @ad<="20040527" | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/20 16:07 |
| S11 | 129 | (G08B1/08 G06F1/3209 G08B17/00 G08B25/009 G08B25/001 G08B17/10 G08B25/10).cpc. and low near power near3 mode and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/20 16:07 |
| S12 | 8 | Gas with (sensor$1 detector$1) and (((low near power near3 mode) (sleep)) with (transmit transmission)) with threshold and @ad<="20040527" | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/20 16:15 |
| S13 | 7 | ambient with (sensor$1 detector$1) and (((low near power near3 mode) (sleep)) with (transmit transmission)) with threshold and @ad<="20040527" | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/20 16:17 |
| S14 | 87 | gas with (sensor$1 detector$1) and (((low near power near3 mode) (sleep)) with (transmit transmission)) and @ad<="20040527" | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/20 16:18 |
| S15 | 1 | gas with (sensor$1 detector$1) with (((low near power near3 mode) (sleep)) with (transmit transmission)) and @ad<="20040527" | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/20 16:18 |
| S16 | 76 | gas with (sensor$1 detector$1) and (((low near power near3 mode) (sleep)) with (transmit transmission)) and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/20 16:19 |
| S17 | 1 | gas with (sensor$1 detector$1) and (((low near power near3 mode) (sleep)) with (transmit transmission)) with (address identifier identity) and | US-PGPUB; USPAT; USOCR; FPRS; EPO; | OR | OFF | 2015/02/20 16:44 |

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|---|---|---|---|---|---|---|
| | | @ad<="20040527" not (kates near3 lawrence).inv. | JPO; DERWENT; IBM_TDB | | | |
| S18 | 51 | gas with (sensor$1 detector$1) and ((((low near power near3 mode) (sleep)) with (transmit transmission)) and (address identifier identity) and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/20 16:44 |
| S19 | 5 | gas with (sensor$1 detector$1) and ((((low near power near3 mode) (sleep)) with (transmit transmission)) and (sensor detector) with (address identifier identity) and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/20 16:45 |
| S20 | 100 | (sensor$1 detector$1) and (((low near power near3 mode) (sleep)) with (transmit transmission)) and (sensor detector) with (address identifier identity) and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/20 16:47 |
| S21 | 4 | (sensor$1 detector$1) and (((low near power near3 mode) (sleep)) with (transmit transmission)) with (sensor detector) with (address identifier identity) and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/20 16:47 |
| S22 | 249 | Gas with (sensor$1 detector$1) with (address identifier identity) and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/20 16:52 |
| S23 | 1 | Gas with (sensor$1 detector$1) with (address identifier identity) with (transmissiom message) and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/20 16:52 |
| S24 | 834 | (sensor$1 detector$1) with (address identifier identity) with (transmissiom message) and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/20 16:53 |
| S25 | 0 | (ambient enviromental) with (sensor$1 detector$1) with (address identifier identity) with (transmissiom message) and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/20 16:53 |
| S26 | 30 | wireless with (sensor$1 detector$1) with (address identifier identity) with | US-PGPUB; USPAT; | OR | OFF | 2015/02/20 16:54 |

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|---|---|---|---|---|---|---|
| | | (transmissiom message) and @ad<="20040527" not (kates near3 lawrence).inv. | USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | | | |
| S27 | 0 | wireless with (sensor$1 detector$1) with (address identifier identity) with (installation (set$1up)) and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/20 17:23 |
| S28 | 198 | (sensor$1 detector$1) with (address identifier identity) with (installation (set$1up)) and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/20 17:23 |
| S29 | 58 | wireless and (sensor$1 detector$1) with (address identifier identity) with (installation (set$1up)) and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/20 17:23 |
| S30 | 19 | wireless and (sensor$1 detector$1) with ( identifier identity) with (installation (set$1up)) and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/20 17:24 |
| S31 | 48 | (sensor$1 detector$1) with ( identifier identity adress) with (installation (set$1up)) and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/22 03:31 |
| S32 | 8 | (sensor$1 detector$1) with ( identifier identity adress) with (installation (set$1up)) with (controller processor micro$1processor) and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/22 03:32 |
| S33 | 451 | (sensor$1 detector$1) with ( sleep stand$1by low$1power) with (tranceiver transmitter receiver) and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/22 03:53 |
| S34 | 217 | (sensor$1 detector$1) with ( sleep stand$1by low$1power) with (tranceiver transmitter) and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/22 03:54 |

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|---|---|---|---|---|---|---|
| S35 | 0 | (sensor$1 detector$1) with ( sleep stand$1by low$1power) with (tranceiver ) and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/22 03:54 |
| S36 | 65 | (sensor$1 detector$1) with ( sleep stand$1by low$1power) with (transceiver ) and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/22 03:54 |
| S37 | 0 | (Gas oxygen carbon) with (sensor$1 detector$1) with ( sleep stand$1by low$1power) with (transceiver ) and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/22 03:56 |
| S38 | 0 | (09/831425).APP. | US-PGPUB; USOCR | OR | OFF | 2015/02/22 11:25 |
| S39 | 10 | (sensor$1 detector$1) with ( sleep stand$1by low$1power) with (transceiver ) and tamper$3 and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/22 12:26 |
| S40 | 0 | (sensor$1 detector$1) and ( sleep stand$1by low$1power) with (transceiver ) with tamper$3 and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/22 12:29 |
| S41 | 0 | ( sleep stand$1by low$1power) with (transceiver ) with tamper$3 and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/22 12:29 |
| S42 | 47 | (sensor$1 detector$1) and ( sleep stand$1by low$1power) with tamper$3 and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/22 12:29 |
| S43 | 9 | (sensor$1 detector$1) with ( sleep stand$1by low$1power) with tamper$3 and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/22 12:29 |
| S44 | 4 | network with routing near3 table and @ad<="20040527" and (Gutierrez).inv. | US-PGPUB; USPAT; USOCR; | OR | OFF | 2015/02/22 17:16 |

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| | | | FPRS; EPO; JPO; DERWENT; IBM_TDB | | | |
| S45 | 317 | (sensor$1 detector$1) with ( message signal) with authentication and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/22 17:20 |
| S46 | 37 | (sensor$1 detector$1) with ( message ) with authentication and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/02/22 17:21 |
| S47 | 2301 | alarm with transmi$3 with (data measure$4) and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/05/07 12:22 |
| S48 | 4652 | alarm with transmit$3 with (data measure$4) and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/05/07 12:23 |
| S49 | 1020 | "340"/$.ccls. and alarm with transmit$3 with (data measure$4) and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/05/07 12:23 |
| S50 | 84 | "340"/573.1.ccls. and alarm with transmit$3 with (data measure$4) and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/05/07 12:50 |
| S51 | 11 | (low near power near3 mode with (transmit transmission)) with threshold and @ad<="20040527" | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/08/26 12:53 |
| S52 | 12 | (low near3 power near3 mode with (transmit transmission)) with threshold and @ad<="20040527" | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/08/26 12:53 |
| S53 | 385 | ((low near3 power near3 mode)(sleep) | US-PGPUB; | OR | OFF | 2015/08/26 |

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| | | with (transmit transmission)) with threshold and @ad<="20040527" | USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | | | 12:54 |
| S54 | 366 | ((low near3 power near3 mode)(sleep with power) with (transmit transmission)) with threshold and @ad<="20040527" | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/08/26 12:54 |
| S55 | 366 | ((low near3 power near3 mode)(sleep with power) with (transmit$1 transmission)) with threshold and @ad<="20040527" | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/08/26 12:54 |
| S56 | 368 | ((low near3 power near3 mode)(sleep with power) with (transmit$3 transmission)) with threshold and @ad<="20040527" | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/08/26 12:55 |
| S57 | 26 | (((low near3 power near3 mode)(sleep with power)) with (transmit$3 transmission)) with threshold and @ad<="20040527" | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/08/26 12:57 |
| S58 | 22 | (sensor$1 detector$1) with ( message ) with checksum and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/08/26 14:03 |
| S59 | 2 | "US 20140118109" | US-PGPUB; USPAT; USOCR; DERWENT | OR | OFF | 2015/08/26 14:25 |
| S60 | 2 | "US 20150070192" | US-PGPUB; USPAT; USOCR; DERWENT | OR | OFF | 2015/08/26 14:25 |
| S61 | 4 | (sensor$1 detector$1) with ( message ) with checksum and encryp$3 and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/08/26 15:17 |
| S62 | 2 | ((wireless remote) near3 (sensor$1 detector$1)) and ( message ) with checksum with encrypt$3 and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; | OR | OFF | 2015/08/26 15:19 |

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| | | | DERWENT; IBM_TDB | | | |
| S63 | 84 | "340"/573.1.ccls. and alarm with transmit$3 with (data measure$4) and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/08/26 17:24 |
| S64 | 138 | (G08B1/08 G06F1/3209 G08B17/00 G08B25/009 G08B25/001 G08B17/10 G08B25/10).cpc. and low near power near3 mode and @ad<="20040527" | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/08/26 17:24 |
| S65 | 0 | (G08B1/08 G06F1/3209 G08B17/00 G08B25/009 G08B25/001 G08B17/10 G08B25/10).pn. and low near power near3 mode and @ad<="20040527" | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/12/03 16:39 |
| S66 | 87 | 340/573.1,870.39.ccls. and alarm with transmit$3 with (data measure$4) and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/12/03 16:40 |
| S67 | 0 | 340/573.1,870.39.ccls. and alarm with transmit$3 with (data measure$4) with ambient with power with encrypted and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/12/03 16:56 |
| S68 | 0 | (G08B1/08 G06F1/3209 G08B17/00 G08B25/009 G08B25/001 G08B17/10 G08B25/10).pn. and alarm with transmit$3 with (data measure$4) with ambient with power with encrypted and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/12/03 16:56 |
| S69 | 0 | (G08B1/08 G06F1/3209 G08B17/00 G08B25/009 G08B25/001 G08B17/10 G08B25/10).cpc. and alarm with transmit$3 with (data measure$4) with ambient with power with encrypted and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2015/12/03 16:58 |
| S70 | 235 | (("Kates") near2 ("Lawrence")).INV. | US-PGPUB; USPAT; USOCR | OR | OFF | 2015/12/03 17:00 |

**EAST Search History (Interference)**

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
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| S71 | 0 | (G08B1/08 G06F1/3209 G08B17/00 | US- | OR | OFF | 2015/12/03 |

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| | | G08B25/009 G08B25/001 G08B17/10 G08B25/10).pn. and (alarm with transmit$3 with (data measure$4) with ambient with power with encrypted).clm. | PGPUB; USPAT | | | 16:57 |
| S72 | 0 | (G08B1/08 G06F1/3209 G08B17/00 G08B25/009 G08B25/001 G08B17/10 G08B25/10).cpc. and (alarm with transmit$3 with (data measure$4) with ambient with power with encrypted).clm. | US-PGPUB; USPAT | OR | OFF | 2015/12/03 16:58 |
| S73 | 0 | 340/573.1,870.39.ccls. and (alarm with transmit$3 with (data measure$4) with ambient with power with encrypted).clm. | US-PGPUB; USPAT | OR | OFF | 2015/12/03 16:58 |
| S74 | 0 | 340/$.ccls. and (alarm with transmit$3 with (data measure$4) with ambient with power with encrypted).clm. | US-PGPUB; USPAT | OR | OFF | 2015/12/03 16:59 |

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| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | **Application Number** | 15/090,973 |
| | **Filing Date** | Apr 5, 2016 |
| | **First Named Inventor** | Lawrence Kates |
| | **Art Unit** | 2686 |
| | **Examiner Name** | Unknown |
| | **Attorney Docket Number** | 563800USCON11 |

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| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | **Application Number** | 15/090,973 |
| | **Filing Date** | Apr 5, 2016 |
| | **First Named Inventor** | Lawrence Kates |
| | **Art Unit** | 2686 |
| | **Examiner Name** | Unknown |
| | **Attorney Docket Number** | 563800USCON11 |

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| | **Application Number** | 15/090,973 |
| | **Filing Date** | Apr 5, 2016 |
| | **First Named Inventor** | Lawrence Kates |
| | **Art Unit** | 2686 |
| | **Examiner Name** | Unknown |
| | **Attorney Docket Number** | 563800USCON11 |

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**EXAMINER SIGNATURE**

| Examiner Signature | /OJIAKO K NWUGO/ | Date Considered | 06/09/2016 |
|---|---|---|---|

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /O.K.N/

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 15/090,973 | 04/05/2016 | Lawrence Kates | 563800USCON11 | 5338 |

124746 7590 08/12/2016

Wolfe-SBMC
116 W. Pacific Avenue
Suite 300
Spokane, WA 99201

| EXAMINER | |
|---|---|
| NWUGO, OJIAKO K | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2685 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 08/12/2016 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docket@sbmc-law.com

| Applicant-Initiated Interview Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 15/090,973 | KATES, LAWRENCE | |
| | Examiner | Art Unit | |
| | OJIAKO NWUGO | 2685 | |

All participants (applicant, applicant's representative, PTO personnel):

(1) *OJIAKO NWUGO*. (3)_____.

(2) *Mathew Johnson*. (4)_____.

Date of Interview: *09 August 2016*.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☐ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☐102 ☒103 ☐Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: *1*.

Identification of prior art discussed: *Hakanen US20020030592*.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

*Applicant representative sought indicate that the limitation "transmit the data measured about the ambient condition as one or more messages, using the wireless transceiver" was not met by Hakanen, however clarified by Examiner that the limitation is met by ¶36 of the Hakanen. No Ageement was reached regarding allowable subject matter.*.

**Applicant recordation instructions:** The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview

**Examiner recordation instructions**: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☒ Attachment

| /OJIAKO NWUGO/<br>Primary Examiner, Art Unit 2685 | |
|---|---|

# Summary of Record of Interview Requirements

**Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record**
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

**Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews**
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

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The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

**Examiner to Check for Accuracy**

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

**UNITED STATES PATENT AND TRADEMARK OFFICE**

| | | | |
|---|---|---|---|
| APPLICANT: | Lawrence Kates | APPLICATION NO.: | 15/090,973 |
| EXAMINER: | Nwugo, Ojiako K. | CONFIRMATION NO.: | 5338 |
| DATE FILED: | April 5, 2016 | GROUP ART UNIT: | 2685 |
| TITLE: | Wireless Sensor Unit Communication Triggering and Management | | |

**RESPONSE TO OFFICE ACTION DATED JUNE 15, 2016**

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

This communication is responsive to the Non-Final Office Action dated June 15, 2016, concerning the above-identified application.

## LIST OF CLAIMS

This list of claims replaces all prior versions and listings.

1. (Currently Amended) A wireless ambient sensor unit, comprising:

a wireless transceiver;

a sensor configured to measure quantitative data about an ambient condition;

a controller in communication with the wireless transceiver and the sensor, the controller configured to:

compare the quantitative data measured about the ambient condition to a stored threshold value while the wireless ambient sensor unit is in a low-power mode;

exit the low-power mode in response to the comparison of the quantitative data with the stored threshold value; and

in response to the exit of the low-power mode, transmit the quantitative data measured about the ambient condition as one or more messages, using the wireless transceiver, the quantitative data being transmitted while the wireless ambient sensor unit is out of the low-power mode and each message includes an address that identifies the wireless ambient sensor unit, a checksum, and an authenticity portion for use in verifying an authenticity of the message.

2. (Original) The wireless ambient sensor unit of claim 1, wherein the controller is further configured for at least a portion of the address to be programmed into the wireless ambient sensor unit during an installation process.

3. (Original) The wireless ambient sensor unit of claim 1, wherein power is not provided to the wireless transceiver in the low-power mode.

4. (Original) The wireless ambient sensor unit of claim 1, wherein the controller is further configured to:

receive a message, via the wireless transceiver to reprogram at least a portion of the address; and

reprogram at least the portion of the address based on the received message.

5. (Currently Amended) The wireless ambient sensor unit of claim 1, wherein the wireless transceiver is configured to use a spread spectrum technique for transmitting the quantitative data measured about the ambient condition.

6. (Original) The wireless ambient sensor unit of claim 1, wherein the controller is further configured to:

exit the low-power mode on a periodic basis;

transmit a status message using the wireless transceiver;

for a predefined period of time following the transmission of the status message, enter a receive mode to wait for a command to be received via the wireless transceiver; and

enter the low power mode following expiration of the predefined period of time.

7. (Original) The wireless ambient sensor unit of claim 1, wherein the ambient condition is one of a level of carbon monoxide or a level of smoke.

8. (Original) The wireless ambient sensor unit of claim 1, further comprising:

a reset switch in communication with the controller, and wherein the controller is further configured to:

in response to actuation of the reset switch, cause the wireless ambient sensor unit to enter a receive mode to receive the address, via the wireless transceiver, to program into the wireless ambient sensor unit.

9. (Currently Amended) The wireless ambient sensor unit of claim 1, further comprising:

a tamper sensor in communication with the controller, and wherein the controller is further configured to:

receive a tamper indication from the tamper sensor indicative of tampering with the wireless ambient sensor unit;

in response to the reception of the tamper indication, exit the low-power mode; and

transmit [[the]] a message including an indication of the tampering via the wireless transceiver.

10. (Original) The wireless ambient sensor unit of claim 1, further comprising an audio output device, and wherein the controller is in communication with the audio output device.

11. (Original) The wireless ambient sensor unit of claim 1, wherein the controller is further configured to:

measure a signal strength received using the wireless transceiver; and

route transmission of the one or more messages based on the measured signal strength.

12. (Original) The wireless ambient sensor unit of claim 1, wherein the controller is further configured to:

prior to the transmission of the one or more messages, listen to a radio frequency channel, using the wireless transceiver, to determine if the radio frequency channel is in use; and

in response to the determination that the radio frequency channel is not is use, transmit the one or more messages via the radio frequency channel.

13. (Currently Amended) A method for using a wireless ambient sensor unit, the method comprising:

measuring an ambient condition with a sensor of the wireless ambient sensor unit;

comparing quantitative data measured about the ambient condition to a stored threshold value while the wireless ambient sensor unit is in a low-power mode;

exiting the low-power mode in response to the comparison of the quantitative data with the stored threshold value; and

in response to said exiting the low-power mode, transmitting, with a wireless transceiver of the wireless ambient sensor unit, one or more messages indicative of the quantitative data measured about the ambient condition, the quantitative data being

transmitted while the wireless ambient sensor unit is out of the low-power mode and each message including an address that identifies the wireless ambient sensor unit, a checksum, and an authenticity portion for use in verifying an authenticity of the message.

14. (Original) The method of claim 13, further comprising:

exiting the low-power mode on a periodic basis;

transmitting a status message using the wireless transceiver;

for a predefined period of time following said transmitting the status message, entering a receive mode to wait for a command to be received via the wireless transceiver; and

entering the low power mode following expiration of the predefined period of time.

15. (Original) The method of claim 13, wherein the ambient condition is one of a level of carbon monoxide or a level of smoke.

16. (Original) The method of claim 13, further comprising:

measuring a signal strength received using the wireless transceiver; and

routing transmission of the one or more messages based on the measured signal strength.

17. (Currently Amended) A system for sensing an ambient condition, the system comprising:

a wireless ambient sensor unit configured to:

measure the ambient condition with a sensor;

compare quantitative data measured about the ambient condition to a stored threshold value, while the wireless ambient sensor unit is in a low-power mode;

exit the low-power mode in response to the comparison of the quantitative data with the stored threshold value; and

in response to the exit of the low-power mode, transmit, with a wireless transceiver, one or more messages indicative of the quantitative data measured about the ambient condition, the quantitative data being transmitted while the wireless ambient sensor unit is out of the low-power mode and each message includes an address that identifies the wireless ambient sensor unit, a checksum, and an authenticity portion for use in verifying an authenticity of the message.

18. (Original) The system of claim 17, further comprising:

a repeater device configured to:

receive from the wireless ambient sensor unit, the one or more messages indicative of the data about the ambient condition; and

transmit the one or more messages to a base unit.

19. (Original) The system of claim 18, wherein the repeater device is further configured to:

attach an address of the repeater device to the one or more messages prior to the transmission of the one or more messages to the base unit.

20. (Original) The system of claim 18, wherein the repeater device is further configured to:

compare the address in the one or more messages received from the wireless ambient sensor unit to a stored database that includes a plurality of sensor addresses; and

ignore the one or more messages based on the address not being included in the plurality of sensor addresses.

## REMARKS

Applicant respectfully requests reconsideration and allowance of the application. Claims 1-20 are pending, of which claims 1, 5, 9, 13, and 17 are amended. Support for the amendments can be found in the specification as filed, *e.g.*, at ¶ [0007] and in Fig. 7.

Applicant does not concede the propriety of the rejections, or the Office's comments. Nevertheless, in the interest of advancing prosecution of the application, claims are amended as indicated above and discussed below. Applicant reserves the right to further argue against the Office's comments and rejections. Additionally, Applicant requests that the Office contact the undersigned agent in an effort to further advance prosecution prior to issuing a subsequent Office Action.

### Interview Summary

Applicant appreciates the Examiner's time to conduct the telephone interview on August 9, 2016, and the efforts to clarify pending issues to advance prosecution of the application. Pending claims were discussed with respect to the cited references, as well as additional features that may be incorporated into the claims. Specifically, we discussed transmitting measured data about an ambient condition after exiting a low-power mode, which is not an alarm signal and Applicant submits is not disclosed by the cited references.

Although no agreement was reached as to specific claim amendments that would place the pending claims in condition for allowance, Applicant submits that the features

incorporated into the independent claims overcome the cited references. The Examiner reserved the right to further evaluate the references of record and/or conduct another search for additional references.

**§ 103 Claim Rejections**

Claims 1-8, 10, 12-15, and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Pub. No. 2002/0030592 to Hakanen et al. ("Hakanen") in view of U.S. Patent No. 6,624,750 to Marman et al. ("Marman") and further in view of U.S. Patent Application Pub. No. 2002/0124169 to Agrawal et al. ("Agrawal"). (Office Action, p. 2).

Claim 9 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Hakanen, Marman, and Agrawal and further in view of U.S. Patent Application Pub. No. 2005/0030175 to Wolfe ("Wolfe"). (Office Action, p. 6).

Claims 11, 16, and 18-20 rejected under 35 U.S.C. § 103(a) as being unpatentable over Hakanen, Marman, and Agrawal and further in view of U.S. Patent Application Pub. No. 2004/0233855 to Gutierrez et al. ("Gutierrez"). (Office Action, p. 6).

Applicant makes no representation that cited references are prior art. This response and any remarks, comments, or amendments included herein are not intended to be, and are not interpreted to be, an admission that the cited references are prior art or that the rejections are proper or conceded. Applicant reserves the right to dispose of

any cited references under 35 U.S.C. § 102 and/or 35 U.S.C. § 103, including but not limited to, antedating one or more of the cited references.

**Claim 1**

In the interest of advancing prosecution and without conceding the propriety of the rejection, independent claim 1 is amended to recite:

A wireless ambient sensor unit, comprising:

a wireless transceiver;

a sensor configured to measure ***quantitative data about*** an ambient condition;

a controller in communication with the wireless transceiver and the sensor, the controller configured to:

compare the ***quantitative*** data measured about the ambient condition to a stored threshold value while the wireless ambient sensor unit is in a low-power mode;

exit the low-power mode in response to the comparison of the ***quantitative*** data with the stored threshold value; and

***in response to the exit of the low-power mode,*** transmit the ***quantitative*** data measured about the ambient condition as one or more messages, using the wireless transceiver, the ***quantitative*** data being transmitted while the wireless ambient sensor unit is out of the low-power mode and each message includes an address that identifies the wireless ambient sensor unit, a checksum, and an authenticity portion for use in verifying an authenticity of the message.

Applicant submits that Hakanen, Marman, and/or Agrawal do not disclose, teach, or in any way suggest the subject matter of claim 1 as amended. The Office cites Hakanen ¶¶ [0004], [0032], [0036], and [0055]-[0057] for "exit the low-power mode in response to the comparison of the data with the stored threshold value," and "transmit

the data measured about the ambient condition as one or more messages, using the wireless transceiver, the data being transmitted while the wireless ambient sensor unit is out of the low-power mode (*Office Action*, pp. 2-3). Applicant disagrees because Hakanen (*Hakanen*, Figs 2A-2C) only shows and describes transmitting an alarm signal in response to exiting a sleep mode. As illustrated in Hakanen Fig. 2A, after exiting sleep mode (30), if an alarm threshold is detected (at 72), an alarm signal is sent (at 74). Only if there is a request from a mobile communicator (at 36) does Hakanen send measured parameters (at 34). The transmission of an alarm signal, and not measured data, in response to exiting a sleep mode in Hakanen is not a basis to reject the feature of sending quantitative data in response to exiting a low-power-mode. Marman and Agrawal also fail to teach or suggest any such subject matter. There is no indication in Hakanen that "in response to the exit of the low-power mode, transmit the quantitative data measured about the ambient condition as one or more messages, using the wireless transceiver," as recited in amended claim 1.

Accordingly, the Hakanen, Marman, and Agrawal combination does not support the §103 rejection of claim 1 as amended for at least the reasons described above, and Applicant requests that the rejection be withdrawn. Additionally, dependent claims 2-12 are allowable as depending from claim 1, and the §103 rejection should be withdrawn. To the extent that dependent claim 11 is further rejected, Gutierrez is not seen to add anything of significance to the rejection of independent claim 1 and the §103 rejection should be withdrawn.

**Claims 13 and 17**

Independent claims 13 and 17 are amended in a manner that is consistent (although not identical) to the amendment entered for claim 1. For example:

Claim 13 recites "exiting the low-power mode in response to the comparison of the ***quantitative*** data with the stored threshold value," and "***in response to said exiting the low-power mode,*** transmitting, with a wireless transceiver of the wireless ambient sensor unit, one or more messages indicative of the ***quantitative*** data measured about the ambient condition, the ***quantitative*** data being transmitted while the wireless ambient sensor unit is out of the low-power mode."

Claim 17 recites "exit the low-power mode in response to the comparison of the ***quantitative*** data with the stored threshold value," and "***in response to the exit of the low-power mode,*** transmit, with a wireless transceiver, one or more messages indicative of the ***quantitative*** data measured about the ambient condition, the ***quantitative*** data being transmitted while the wireless ambient sensor unit is out of the low-power mode."

As discussed above in response to the rejection of claim 1, Hakanen, Marman, and/or Agrawal do not disclose, teach, or in any way suggest the subject matter of claims 13 and 17 as amended. Hakanen only describes transmitting an alarm signal in response to exiting a sleep mode, but does not send quantitative data in response to exiting a low-power-mode. Marman and Agrawal also fail to teach or suggest any such subject matter. There is no indication in the cited references of "exiting the low-power mode in response to the comparison of the quantitative data with the stored threshold value," and "in response to said exiting the low-power mode, transmitting, with a

wireless transceiver of the wireless ambient sensor unit, one or more messages indicative of the quantitative data measured about the ambient condition, the quantitative data being transmitted while the wireless ambient sensor unit is out of the low-power mode," as recited in claim 13, or to "exit the low-power mode in response to the comparison of the quantitative data with the stored threshold value," and "in response to the exit of the low-power mode, transmit, with a wireless transceiver, one or more messages indicative of the quantitative data measured about the ambient condition, the quantitative data being transmitted while the wireless ambient sensor unit is out of the low-power mode," as recited in claim 17.

Accordingly, the Hakanen, Marman, and Agrawal combination does not support the §103 rejection of claims 13 and 17 as amended for at least the reasons described above, and Applicant requests that the rejection be withdrawn. Additionally, dependent claims 14-16 and 18-20 are allowable as depending from respective independent claims 13 and 17, and the §103 rejection should be withdrawn. To the extent that dependent claims 16 and 18-20 are further rejected, Gutierrez is not seen to add anything of significance to the rejection of independent claims 13 and 17, and the §103 rejection should be withdrawn.

**Conclusion**

Applicant submits that all objections and/or rejections of the pending claims have been addressed, and respectfully requests issuance of the application. If any issues remain that preclude issuance of the application, the Examiner is requested to contact the undersigned agent before issuing a subsequent Action.

Respectfully submitted,

Dated: August 12, 2016 By: /Matthew Johnson/

Matthew Johnson
Reg. No. 72,299
(509) 755-7267

| Electronic Acknowledgement Receipt | |
|---|---|
| **EFS ID:** | 26630876 |
| **Application Number:** | 15090973 |
| **International Application Number:** | |
| **Confirmation Number:** | 5338 |
| **Title of Invention:** | Wireless Sensor Unit Communication Triggering and Management |
| **First Named Inventor/Applicant Name:** | Lawrence Kates |
| **Customer Number:** | 124746 |
| **Filer:** | William Breen/Whitney Soule |
| **Filer Authorized By:** | William Breen |
| **Attorney Docket Number:** | 563800USCON11 |
| **Receipt Date:** | 12-AUG-2016 |
| **Filing Date:** | 05-APR-2016 |
| **Time Stamp:** | 16:24:30 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| Submitted with Payment | no |
|---|---|

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | | 563800USCON11_Response_to_Non-Final_OA.pdf | 140036<br>6d6deec8b96a55af4fec541b3d3c15e524b3c888 | yes | 15 |

| | Multipart Description/PDF files in .zip description | | |
|---|---|---|---|
| | **Document Description** | **Start** | **End** |
| | Amendment/Req. Reconsideration-After Non-Final Reject | 1 | 1 |
| | Claims | 2 | 8 |
| | Applicant summary of interview with examiner | 9 | 10 |
| | Applicant Arguments/Remarks Made in an Amendment | 11 | 15 |
| **Warnings:** | | | |
| **Information:** | | | |
| | **Total Files Size (in bytes):** | 140036 | |

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**New Applications Under 35 U.S.C. 111**
**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**
**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**
**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

| PATENT APPLICATION FEE DETERMINATION RECORD<br>Substitute for Form PTO-875 | Application or Docket Number<br>15/090,973 | Filing Date<br>04/05/2016 | ☐ To be Mailed |
|---|---|---|---|

**ENTITY**: ☒ LARGE ☐ SMALL ☐ MICRO

## APPLICATION AS FILED – PART I

| FOR | (Column 1) NUMBER FILED | (Column 2) NUMBER EXTRA | RATE ($) | FEE ($) |
|---|---|---|---|---|
| ☐ BASIC FEE (37 CFR 1.16(a), (b), or (c)) | N/A | N/A | N/A | |
| ☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m)) | N/A | N/A | N/A | |
| ☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q)) | N/A | N/A | N/A | |
| TOTAL CLAIMS (37 CFR 1.16(i)) | minus 20 = | * | X $ = | |
| INDEPENDENT CLAIMS (37 CFR 1.16(h)) | minus 3 = | * | X $ = | |
| ☐ APPLICATION SIZE FEE (37 CFR 1.16(s)) | If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). | | | |
| ☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) | | | | |
| * If the difference in column 1 is less than zero, enter "0" in column 2. | | | TOTAL | |

## APPLICATION AS AMENDED – PART II

| AMENDMENT | 08/12/2016 | (Column 1) CLAIMS REMAINING AFTER AMENDMENT | | (Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR | (Column 3) PRESENT EXTRA | RATE ($) | ADDITIONAL FEE ($) |
|---|---|---|---|---|---|---|---|
| | Total (37 CFR 1.16(i)) | * 20 | Minus | ** 20 | = 0 | X $80 = | 0 |
| | Independent (37 CFR 1.16(h)) | * 3 | Minus | ***3 | = 0 | X $420 = | 0 |
| | ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | |
| | ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | |
| | | | | | | TOTAL ADD'L FEE | **0** |

| AMENDMENT | | (Column 1) CLAIMS REMAINING AFTER AMENDMENT | | (Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR | (Column 3) PRESENT EXTRA | RATE ($) | ADDITIONAL FEE ($) |
|---|---|---|---|---|---|---|---|
| | Total (37 CFR 1.16(i)) | * | Minus | ** | = | X $ = | |
| | Independent (37 CFR 1.16(h)) | * | Minus | *** | = | X $ = | |
| | ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | |
| | ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | |
| | | | | | | TOTAL ADD'L FEE | |

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
/RENEE M. COLLINS/

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | **Application Number** | 15/090,973 |
| | **Filing Date** | Apr 5, 2016 |
| | **First Named Inventor** | Lawrence Kates |
| | **Art Unit** | 2685 |
| | **Examiner Name** | Ojiako K. Nwugo |
| | **Attorney Docket Number** | 563800USCON11 |

| U.S. PATENTS | | | |
|---|---|---|---|
| Examiner Initial* | Patent Number | Issue Date | Patentee or Applicant |
| | US-5565852 | Oct 15, 1996 | Petlier, Mark A., et al. |
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| | US-6421539 | Jul 16, 2002 | Jeong, Jin-soo |
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| | US-9412260 | Aug 9, 2016 | Kates, Lawrence |
| | | | |
| **U.S. PATENT APPLICATION PUBLICATIONS** | | | |
| Examiner Initial* | Publication Number | Publication Date | Patentee or Applicant |
| | US-20020102979 | Aug 1, 2002 | Curley, Joseph, et al. |
| | US-20020126005 | Sep 12, 2002 | Hardman, Gordon E., et al. |
| | US-20030025612 | Feb 6, 2003 | Holmes, John K., et al. |
| | US-20040017291 | Jan 29, 2004 | Hardman, Gordon E., et al. |
| | US-20040023629 | Feb 5, 2004 | Klank, Otto |
| | US-20040222884 | Nov 11, 2004 | Costa, Hilario, et al. |
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| | US-20070001854 | Jan 4, 2007 | Chung, Kevin K., et al. |
| | US-20150172887 | Jun 18, 2015 | Petite, Thomas D. |
| | | | |
| **NON-PATENT LITERATURE DOCUMENTS** | | | |
| Examiner Initials* | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | | |
| | "Non-Final Office Action", Application Number 15/161,880, 07/12/2016, 10 pages | | |
| | "Non-Final Office Action", Application Number 14/534,848, 08/11/2016, 12 pages | | |
| | "Final Office Action", Application Number 14/536,108, 06/13/2016, 16 pages | | |

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | **Application Number** | 15/090,973 |
| | **Filing Date** | Apr 5, 2016 |
| | **First Named Inventor** | Lawrence Kates |
| | **Art Unit** | 2685 |
| | **Examiner Name** | Ojiako K. Nwugo |
| | **Attorney Docket Number** | 563800USCON11 |

| EXAMINER SIGNATURE | | | |
|---|---|---|---|
| Examiner Signature | | Date Considered | |
| *EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant. | | | |

# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | 15090973 |
| **Filing Date:** | 05-Apr-2016 |
| **Title of Invention:** | Wireless Sensor Unit Communication Triggering and Management |
| **First Named Inventor/Applicant Name:** | Lawrence Kates |
| **Filer:** | David Anthony Morasch/Kenneth Linder |
| **Attorney Docket Number:** | 563800USCON11 |

Filed as Large Entity

**Filing Fees for Utility under 35 USC 111(a)**

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| **Extension-of-Time:** | | | | |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Miscellaneous:** | | | | |
| Submission- Information Disclosure Stmt | 1806 | 1 | 180 | 180 |
| | | **Total in USD ($)** | | **180** |

| Electronic Acknowledgement Receipt | |
|---|---|
| **EFS ID:** | 26641841 |
| **Application Number:** | 15090973 |
| **International Application Number:** | |
| **Confirmation Number:** | 5338 |
| **Title of Invention:** | Wireless Sensor Unit Communication Triggering and Management |
| **First Named Inventor/Applicant Name:** | Lawrence Kates |
| **Customer Number:** | 124746 |
| **Filer:** | David Anthony Morasch/Kenneth Linder |
| **Filer Authorized By:** | David Anthony Morasch |
| **Attorney Docket Number:** | 563800USCON11 |
| **Receipt Date:** | 15-AUG-2016 |
| **Filing Date:** | 05-APR-2016 |
| **Time Stamp:** | 15:02:44 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | yes |
| Payment Type | Credit Card |
| Payment was successfully received in RAM | $180 |
| RAM confirmation Number | 1307 |
| Deposit Account | 504143 |
| Authorized User | SIMON, SCOTT |
| The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:<br>Charge any Additional Fees required under 37 CFR 1.16 (National application filing, search, and examination fees)<br>Charge any Additional Fees required under 37 CFR 1.17 (Patent application and reexamination processing fees) | |

Charge any Additional Fees required under 37 CFR 1.19 (Document supply fees)

Charge any Additional Fees required under 37 CFR 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 CFR 1.21 (Miscellaneous fees and charges)

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | | 563800USCON11IDS.pdf | 182293<br>6869753e244b1834ba42d09878a938b6a20f8158 | yes | 3 |
| | **Multipart Description/PDF files in .zip description** | | | | |
| | **Document Description** | | **Start** | **End** | |
| | Transmittal Letter | | 1 | 1 | |
| | Information Disclosure Statement (IDS) Form (SB08) | | 2 | 3 | |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | Non Patent Literature | 14534848NFOA081116.pdf | 391823<br>aa99c13f3431d10a82d1b3e1074c2787b25920fd | no | 12 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 3 | Non Patent Literature | 14536108FOA061316.pdf | 581025<br>b370effe88cbd1700378e5ba08b7c49cab514afa | no | 16 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 4 | Non Patent Literature | 15161880NFOA071216.pdf | 363570<br>82fe34c3d139aa1d209893f3ccced1d132599cf6 | no | 10 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 5 | Fee Worksheet (SB06) | fee-info.pdf | 30536<br>43462f3bd1290d36b95812e2c8710cb772930d16 | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |

| Total Files Size (in bytes): | 1549247 |
|---|---|

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

| | | | |
|---|---|---|---|
| Applicant: | Lawrence Kates | Examiner: | Ojiako K. Nwugo |
| Serial No.: | 15/090,973 | Group Art Unit: | 2685 |
| Filed: | April 5, 2016 | Docket: | 563800USCON11 |
| Title: | Wireless Sensor Unit Communication Triggering and Management | | |

## SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

In compliance with the duty imposed by 37 C.F.R. § 1.56, and in accordance with 37 C.F.R. §§ 1.97 *et. seq.*, the referenced materials are brought to the attention of the Examiner for consideration in connection with the above-identified patent application. Applicants respectfully request that this Supplemental Information Disclosure Statement be entered and the documents listed on the attached Form 1449 be considered by the Examiner and made of record. Pursuant to the provisions of MPEP 609, Applicants request that a copy of the 1449 form, initialed as being considered by the Examiner, be returned to the Applicants with the next official communication.

Pursuant to 37 C.F.R. § 1.97(c)(2), Applicants have included the fee of $180.00 as set forth in 37 C.F.R. § 1.17(p). Please charge any additional fees or credit any overpayment to Deposit Account No. 50-4143.

Respectfully submitted,

Lawrence Kates

By their Representatives,

Date August 15, 2016 By /Matthew Johnson/
Matthew Johnson
Reg. No. 72,299

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UNITED STATES DEPARTMENT OF COMMERCE
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| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|---|---|---|---|
| 15/090,973 | 04/05/2016 | Lawrence Kates | 563800USCON11 |

**CONFIRMATION NO. 5338**

124746
Wolfe-SBMC
116 W. Pacific Avenue
Suite 300
Spokane, WA 99201

**PUBLICATION NOTICE**

*OC000000085357243*

**Title:**Wireless Sensor Unit Communication Triggering and Management

**Publication No.**US-2016-0247382-A1
**Publication Date:**08/25/2016

## NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently http://pair.uspto.gov/. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 15/090,973 | 04/05/2016 | Lawrence Kates | 563800USCON11 | 5338 |

124746 7590 11/10/2016

Wolfe-SBMC
116 W. Pacific Avenue
Suite 300
Spokane, WA 99201

| EXAMINER | |
|---|---|
| NWUGO, OJIAKO K | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2685 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 11/10/2016 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docket@sbmc-law.com

| Office Action Summary | Application No. 15/090,973 | Applicant(s) KATES, LAWRENCE | |
|---|---|---|---|
| | Examiner OJIAKO NWUGO | Art Unit 2685 | AIA (First Inventor to File) Status Yes |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *8/25/2016*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims***

5)☒ Claim(s) *1-20* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-20* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

**Application Papers**

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

**Certified copies:**

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

***Response to Amendment***

***Response to Arguments***

Applicant's arguments with respect to **claims 1-20** have been considered but are moot because the arguments do not apply to any of the references being used in the current rejection.

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102 of this title, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103 are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claim 1-8, 10, 12-15, 17** are rejected under 35 U.S.C. 103 as being unpatentable over Hakanen US20020030592 in view of Marman US6624750 in view of Agrawal US20020124169 in view **Okubo US20040164855**.

Regarding **Claim 1**, Hakanen discloses in fig. 2 and ¶s55-57 A wireless ambient sensor unit (system 2 of fig. 1 and ¶23), comprising: a wireless transceiver (transceiver 16 of ¶s35, 37); a sensor (sensor 20, 22, 24, 26) configured to measure an ambient condition; a controller (CPU 14) in communication with the wireless transceiver and the sensor, the controller configured to: compare data measured about the ambient condition to a stored threshold value while the wireless ambient sensor unit is in a low-power mode; exit the low-power mode in response to the comparison of the data with the stored threshold value (¶32 in view of ¶s55-57); and transmit the data measured (operational parameters of ¶36 in view of ¶4) about the ambient condition as one or more messages, using the wireless transceiver, the data being transmitted while the wireless ambient sensor unit is out of the low-power mode (¶32 in view of ¶s55-57).

Hakanen fails to disclose each message includes an address that identifies the wireless ambient sensor unit.

However Marman discloses in fig. 2 and col.20:36-41 each message includes an address that identifies the wireless ambient sensor unit.

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to include the address of Marman into Hakanen for the purpose of identifying form a given communication device to facilitate message processing.

Further Hakanen and Marman fail to disclose message includes a checksum, and an authenticity portion for use in verifying an authenticity of the message.

However, Agrawal discloses in figs. 7, 8 and ¶61 message includes a checksum, and an authenticity portion for use in verifying an authenticity of the message.

Therefore, it would have been obvious for one of ordinary skill in that art at the time of the invention features of Agrawal in view of Hakanen and Marman to enhance system security.

**Further Hakanen, Marman and Agrawal fail to disclose comparing *quantitative* data, exit the low-power mode in response to the comparison of the *quantitative* data with the stored threshold value; and in response to the exit of the low-power mode, transmit the quantitative data measured about the ambient condition as one or more messages.**

**However Okubo discloses in in fig. 3 and ¶27 the transmitter 30 is in a sleep state such that substantially no power from the battery 36 is consumed during the time period other than the above-described measuring operation time t2 and the transmitting operation time t3. In ¶30 Okubo further discloses In a temperature compensation mode, the transmission controller 31 controls the transmitting circuit 34 to perform the transmitting operation at time intervals (second time intervals) shorter than the transmission time interval t4, thus by the**

**shorting the time interval between transmissions exits low power mode and in view of ¶s29,31,32 Okubo discloses comparing *quantitative* data, exit the low-power mode in response to the comparison of the *quantitative* data with the stored threshold value; and in response to the exit of the low-power mode, transmit the quantitative data measured about the ambient condition as one or more messages.**

**Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to include Okubo into Hakanen, Marman and Agrawal to conserve power while effectively monitoring system properties.**

Regarding **Claim 2**, Marman discloses in fig. 2 and col.24:11-24 wherein the controller is further configured for at least a portion of the address to be programmed into the wireless ambient sensor unit during an installation process.

Regarding **Claim 3**, Marman discloses in fig. 2 and col. 28:20-27 wherein power is not provided to the wireless transceiver in the low-power mode.

Regarding **Claim 4**, Marman discloses in fig. 2 and col.24:11-24 wherein the controller is further configured to: receive a message, via the wireless transceiver to reprogram at least a portion of the address; and reprogram at least the portion of the address based on the received message.

Regarding **Claim 5**, Marman discloses in fig. 2 and col.21:45-col.22:24 wherein the wireless transceiver is configured to use a spread spectrum technique for transmitting the **quantitative** data measured about the ambient condition.

Regarding **Claim 6**, Hanaken discloses in ¶56 wherein the controller is further configured to: exit the low-power mode on a periodic basis; transmit a status message using the wireless transceiver; for a predefined period of time following the transmission of the status message, enter a receive mode to wait for a command to be received via the wireless transceiver; and enter the low power mode following expiration of the predefined period of time.

Regarding **Claim 7**, Marman discloses in fig. 2 and col.7:65-col.8:8 wherein the ambient condition is one of a level of carbon monoxide or a level of smoke.

Regarding **Claim 8**, Marman discloses in fig. 2 and col.12:35-45 further comprising: a reset switch in communication with the controller, and wherein the controller is further configured to: in response to actuation of the reset switch, cause the wireless ambient sensor unit to enter a receive mode to receive the address, via the wireless transceiver, to program into the wireless ambient sensor unit.

Regarding **Claim 10**, Marman discloses in figs. 5a, 5b and col. 10:27-26 further comprising an audio output device, and wherein the controller is in communication with the audio output device.

Regarding **Claim 12**, Marman discloses in fig. 2 and col.21:45-col.22:24 wherein the controller is further configured to: prior to the transmission of the one or more messages, listen to a radio frequency channel, using the wireless transceiver, to determine if the radio frequency channel is in use; and in response to the determination that the radio frequency channel is not is use, transmit the one or more messages via the radio frequency channel.

Regarding **Claim 13**, the limitations are analogous to the limitation of **claim 1** and is rejected on similar grounds.

Regarding **Claim 14**, Hanaken discloses in ¶56 exiting the low-power mode on a periodic basis; transmitting a status message using the wireless transceiver; for a predefined period of time following said transmitting the status message, entering a receive mode to wait for a command to be received via the wireless transceiver; and entering the low power mode following expiration of the predefined period of time.

Regarding **Claim 15**, Marman discloses in fig. 2 and col.7:65-col.8:8 wherein the ambient condition is one of a level of carbon monoxide or a level of smoke.

Regarding **Claim 17**, the limitations are analogous to the limitation of **claim 1** and is rejected on similar grounds.

**Claim 9** is rejected under 35 U.S.C. 103 as being unpatentable over Hakanen, Marman, Agrawal and **Okubo** as applied to **claim 1** above in view of Wolfe US20050030175.

Regarding **Claim 9,** Hakanen discloses in fig. 1 and ¶s 28, 32, 55-57 sensor with the controller, and wherein the controller is further configured to: receive a tamper indication from the tamper sensor indicative of tampering with the wireless ambient sensor unit; in response to the reception of the tamper indication, exit the low-power mode; and transmit the a message including an indication of the tampering via the wireless transceiver.

Hakanen, Marman and Agrawal fail to disclose a tamper senor.
However Wolfe discloses in fig. 1 and ¶42 tamper sensor,

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to include tamper sensor of Wolfe into Hakanen, Marman Agrawal and **Okubo** to enhance system robustness.

**Claim 11, 16, 17-20** are rejected under 35 U.S.C. 103 as being unpatentable over Hakanen, Marman Agrawal and **Okubo** as applied to **claim 1, 13, 18** above in view of Gutierrez US2040233855.

Regarding **Claim 11**, Hakanen, Marman and Agrawal fail to disclose wherein the controller is further configured to: measure a signal strength received using the wireless transceiver; and route transmission of the one or more messages based on the measured signal strength.

However Gutierrez's disclosure in fig. 6 and ¶s85-86 renders obvious wherein the controller is further configured to: measure a signal strength received using the wireless transceiver; and route transmission of the one or more messages based on the measured signal strength.

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to include features of Guteirrez into Hakanen, Marman Agrawal and **Okubo** to enhance system robustness.

**Claim 16** is rejected on similar grounds as **claim 11**.

Regarding **Claim 18**, Hakanen, Marman and Agrawal fail to disclose a repeater device configured to: receive from the wireless ambient sensor unit, the one or more

messages indicative of the data about the ambient condition; and transmit the one or more messages to a base unit.

However, Gutierrez's disclosures in fig. 5 and ¶s84-85 renders obvious a repeater device (ND 14) configured to: receive from the wireless ambient sensor unit, the one or more messages indicative of the data about the ambient condition; and transmit the one or more messages to a base unit (NCO 24).

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to include features of Guteirrez into Hakanen, Marman Agrawal and **Okubo** to enhance system robustness.

Regarding **Claim 19**, Gutierrez's disclosures in fig. 5 and ¶s84-85 renders obvious wherein the repeater device is further configured to: attach an address of the repeater device to the one or more messages prior to the transmission of the one or more messages to the base unit.

Regarding **Claim 20**, Gutierrez's disclosures in fig. 5 and ¶s84-85 renders obvious wherein the repeater device is further configured to: compare the address in the one or more messages received from the wireless ambient sensor unit to a stored database that includes a plurality of sensor addresses; and ignore the one or more messages based on the address not being included in the plurality of sensor addresses.

**Claim(s) 1-3, 13, 17** is/are rejected under 35 U.S.C. 103 as being unpatentable over Okubo US20040164855 in view of Agrawal US20020124169.

Regarding **Claim 1**, Okubo discloses fig. 2 and ¶s22, 24, 25,29 A wireless ambient sensor unit (transmitter 30) , comprising: a wireless transceiver (transmitting unit 34); a sensor (temperature sensor 33) configured to measure quantitative data (temperature data) about an ambient condition; a controller (transmission control 31) in communication with the wireless transceiver and the sensor, the controller (¶s30-32) configured to: compare the quantitative data measured about the ambient condition to a stored threshold value while the wireless ambient sensor unit is in a low-power mode (In fig. 3 and ¶27 transmitter 30 has a transmission operation time T3 and is otherwise in a sleep state during interval T4, In ¶s29-30 In a temperature compensation mode, the transmission controller 31 controls the transmitting circuit 34 to perform the transmitting operation at time intervals (second time intervals) shorter than the transmission time interval t4 in the normal mode and equal to or longer than the measurement time interval t1, thus shorting transmission intervals reads on exiting low power in response to comparing data) ; exit the low-power mode in response to the comparison of the quantitative data with the stored threshold value; and in response to the exit of the low-power mode(fig ¶s 27-30) , transmit the quantitative data (transmitting temperature data of ¶26) measured about the ambient condition as one or more messages, using the wireless transceiver, the quantitative data being transmitted while the wireless ambient sensor unit is out of the low-power mode and each message includes an address (ID codes of ¶25) that identifies the wireless ambient sensor unit.

Okubo fails to discloses a checksum, and an authenticity portion for use in verifying an authenticity of the message

However, Agrawal discloses in figs. 7, 8 and ¶61 message includes a checksum, and an authenticity portion for use in verifying an authenticity of the message. Therefore, it would have been obvious for one of ordinary skill in that art at the time of the invention features of Agrawal in view of Okubo to enhance system security.

Regarding **Claim 2**, Okubo discloses in ¶s23,25 the ID codes registered thus rendering obvious wherein the controller is further configured for at least a portion of the address to be programmed into the wireless ambient sensor unit during an installation process.

Regarding **Claim 3**, Okubo discloses in ¶27 the transmitter 30 is in a sleep state such that substantially no power from the battery 36 is consumed during the time period other than the above-described measuring operation time t2 and the transmitting operation time t3 thus rendering obvious wherein power is not provided to the wireless transceiver in the low-power mode.

Regarding **Claims 13**, **17** the limitations are analogous to the limitation of **claim 1** and is rejected on similar grounds.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OJIAKO NWUGO whose telephone number is (571)272-9755. The examiner can normally be reached on 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, HAI PHAN can be reached on 5712726338. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/OJIAKO NWUGO/
Primary Examiner, Art Unit 2685

| Notice of References Cited | Application/Control No. 15/090,973 | Applicant(s)/Patent Under Reexamination KATES, LAWRENCE | |
|---|---|---|---|
| | Examiner OJIAKO NWUGO | Art Unit 2685 | Page 1 of 1 |

**U.S. PATENT DOCUMENTS**

| * | | Document Number Country Code-Number-Kind Code | Date MM-YYYY | Name | CPC Classification | US Classification |
|---|---|---|---|---|---|---|
| * | A | US-2004/0164855 A1 | 08-2004 | Okubo, Youichi | B60C23/20 | 340/445 |
| | B | US- | | | | |
| | C | US- | | | | |
| | D | US- | | | | |
| | E | US- | | | | |
| | F | US- | | | | |
| | G | US- | | | | |
| | H | US- | | | | |
| | I | US- | | | | |
| | J | US- | | | | |
| | K | US- | | | | |
| | L | US- | | | | |
| | M | US- | | | | |

**FOREIGN PATENT DOCUMENTS**

| * | | Document Number Country Code-Number-Kind Code | Date MM-YYYY | Country | Name | CPC Classification |
|---|---|---|---|---|---|---|
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| | Q | | | | | |
| | R | | | | | |
| | S | | | | | |
| | T | | | | | |

**NON-PATENT DOCUMENTS**

| * | | Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages) |
|---|---|---|
| | U | |
| | V | |
| | W | |
| | X | |

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | **Application Number** | 15/090,973 |
| | **Filing Date** | Apr 5, 2016 |
| | **First Named Inventor** | Lawrence Kates |
| | **Art Unit** | 2685 |
| | **Examiner Name** | Ojiako K. Nwugo |
| | **Attorney Docket Number** | 563800USCON11 |

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|---|---|---|---|
| Examiner Initial* | Patent Number | Issue Date | Patentee or Applicant |
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| | | | |
| **U.S. PATENT APPLICATION PUBLICATIONS** | | | |
| Examiner Initial* | Publication Number | Publication Date | Patentee or Applicant |
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| | US-20020126005 | Sep 12, 2002 | Hardman, Gordon E., et al. |
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| | US-20150172887 | Jun 18, 2015 | Petite, Thomas D. |
| | | | |
| **NON-PATENT LITERATURE DOCUMENTS** | | | |
| Examiner Initials* | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | | |
| | "Non-Final Office Action", Application Number 15/161,880, 07/12/2016, 10 pages | | |
| | "Non-Final Office Action", Application Number 14/534,848, 08/11/2016, 12 pages | | |
| | "Final Office Action", Application Number 14/536,108, 06/13/2016, 16 pages | | |

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /O.K.N/

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | **Application Number** | 15/090,973 |
| | **Filing Date** | Apr 5, 2016 |
| | **First Named Inventor** | Lawrence Kates |
| | **Art Unit** | 2685 |
| | **Examiner Name** | Ojiako K. Nwugo |
| | **Attorney Docket Number** | 563800USCON11 |

| EXAMINER SIGNATURE | | | |
|---|---|---|---|
| Examiner Signature | /OJIAKO K NWUGO/ | Date Considered | 11/03/2016 |
| *EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant. | | | |

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /O.K.N/

| Index of Claims | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 15090973 | KATES, LAWRENCE |
| | Examiner | Art Unit |
| | OJIAKO NWUGO | 2685 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ✓ | Rejected | - | Cancelled | N | Non-Elected | A | Appeal |
| = | Allowed | ÷ | Restricted | I | Interference | O | Objected |

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

| CLAIM | | DATE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Final | Original | 06/08/2016 | 11/02/2016 | | | | | | | |
| | 1 | ✓ | ✓ | | | | | | | |
| | 2 | ✓ | ✓ | | | | | | | |
| | 3 | ✓ | ✓ | | | | | | | |
| | 4 | ✓ | ✓ | | | | | | | |
| | 5 | ✓ | ✓ | | | | | | | |
| | 6 | ✓ | ✓ | | | | | | | |
| | 7 | ✓ | ✓ | | | | | | | |
| | 8 | ✓ | ✓ | | | | | | | |
| | 9 | ✓ | ✓ | | | | | | | |
| | 10 | ✓ | ✓ | | | | | | | |
| | 11 | ✓ | ✓ | | | | | | | |
| | 12 | ✓ | ✓ | | | | | | | |
| | 13 | ✓ | ✓ | | | | | | | |
| | 14 | ✓ | ✓ | | | | | | | |
| | 15 | ✓ | ✓ | | | | | | | |
| | 16 | ✓ | ✓ | | | | | | | |
| | 17 | ✓ | ✓ | | | | | | | |
| | 18 | ✓ | ✓ | | | | | | | |
| | 19 | ✓ | ✓ | | | | | | | |
| | 20 | ✓ | ✓ | | | | | | | |

| Search Notes | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 15090973 | KATES, LAWRENCE |
| | Examiner | Art Unit |
| | OJIAKO NWUGO | 2685 |

| CPC- SEARCHED | | |
|---|---|---|
| Symbol | Date | Examiner |
| G08B1/08 G06F1/3209 G08B17/00 G08B25/009 G08B25/001 G08B17/10 G08B25/10 with text | 6/8/2016 | O.N. |
| G08B1/08 G06F1/3209 G08B17/00 G08B25/009 G08B25/001 G08B17/10 G08B25/10 | 11/2/2016 | O.N. |

| CPC COMBINATION SETS - SEARCHED | | |
|---|---|---|
| Symbol | Date | Examiner |
| | | |

| US CLASSIFICATION SEARCHED | | | |
|---|---|---|---|
| Class | Subclass | Date | Examiner |
| 340 | 573.1,870.39 with text | 6/8/2016 | O.N. |
| 340 | 573.1,870.39 | 11/2/2016 | O.N. |

| SEARCH NOTES | | |
|---|---|---|
| Search Notes | Date | Examiner |
| See attached search histtory | 6/8/2016 | O.N. |
| G08B1/08 G06F1/3209 G08B17/00 G08B25/009 G08B25/001 G08B17/10 G08B25/10 with text | 11/2/2016 | O.N. |
| 340/573.1,870.39 with text | 11/2/2016 | O.N. |
| See attached search history | 11/2/2016 | O.N. |

| INTERFERENCE SEARCH | | | |
|---|---|---|---|
| US Class/ CPC Symbol | US Subclass / CPC Group | Date | Examiner |
| | | | |

| | |
|---|---|
| | /OJIAKO NWUGO/<br>Primary Examiner.Art Unit 2685 |

**EAST Search History**

**EAST Search History (Prior Art)**

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|---|---|---|---|---|---|---|
| L1 | 0 | (G08B1/08 G06F1/3209 G08B17/00 G08B25/009 G08B25/001 G08B17/10 G08B25/10).cpc. and alarm with transmit$3 with (data measure$4) with ambient with power with encrypted and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2016/11/02 18:27 |
| L2 | 87 | 340/573.1,870.39.ccls. and alarm with transmit$3 with (data measure$4) and @ad<="20040527" not (kates near3 lawrence).inv. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2016/11/02 18:28 |

**EAST Search History (Interference)**

<This search history is empty>

**11/2/2016 6:55:04 PM**
**C:\Users\onwugo\Documents\EAST\Workspaces\15090973.wsp**

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | **Application Number** | 15/090,973 |
| | **Filing Date** | Apr 5, 2016 |
| | **First Named Inventor** | Lawrence Kates |
| | **Art Unit** | 2685 |
| | **Examiner Name** | Ojiako K. Nwugo |
| | **Attorney Docket Number** | 563800USCON11 |

| U.S. PATENTS | | | |
|---|---|---|---|
| Examiner Initial* | Patent Number | Issue Date | Patentee or Applicant |
| | US-9474023 | Oct 18, 2016 | Kates, Lawrence |
| | | | |
| **U.S. PATENT APPLICATION PUBLICATIONS** | | | |
| Examiner Initial* | Publication Number | Publication Date | Patentee or Applicant |
| | US-20160267761 | Sep 15, 2016 | Kates, Lawrence |
| | US-20160286490 | Sep 29, 2016 | Kates, Lawrence |
| | | | |
| **NON-PATENT LITERATURE DOCUMENTS** | | | |
| Examiner Initials* | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | | |
| | "Notice of Allowance", Application Number 15/179,350, 08/15/2016, 8 pages | | |

| EXAMINER SIGNATURE | | | |
|---|---|---|---|
| Examiner Signature | | Date Considered | |

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | 15090973 |
| **Filing Date:** | 05-Apr-2016 |
| **Title of Invention:** | Wireless Sensor Unit Communication Triggering and Management |
| **First Named Inventor/Applicant Name:** | Lawrence Kates |
| **Filer:** | David Anthony Morasch/Kenneth Linder |
| **Attorney Docket Number:** | 563800USCON11 |

Filed as Large Entity

**Filing Fees for Utility under 35 USC 111(a)**

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| **Extension-of-Time:** | | | | |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Miscellaneous:** | | | | |
| Submission- Information Disclosure Stmt | 1806 | 1 | 180 | 180 |
| | | **Total in USD ($)** | | **180** |

| Electronic Acknowledgement Receipt | |
|---|---|
| **EFS ID:** | 27503724 |
| **Application Number:** | 15090973 |
| **International Application Number:** | |
| **Confirmation Number:** | 5338 |
| **Title of Invention:** | Wireless Sensor Unit Communication Triggering and Management |
| **First Named Inventor/Applicant Name:** | Lawrence Kates |
| **Customer Number:** | 124746 |
| **Filer:** | David Anthony Morasch/Kenneth Linder |
| **Filer Authorized By:** | David Anthony Morasch |
| **Attorney Docket Number:** | 563800USCON11 |
| **Receipt Date:** | 14-NOV-2016 |
| **Filing Date:** | 05-APR-2016 |
| **Time Stamp:** | 16:22:25 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | yes |
| Payment Type | CARD |
| Payment was successfully received in RAM | $180 |
| RAM confirmation Number | 111516INTEFSW16241500 |
| Deposit Account | |
| Authorized User | |
| The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: | |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | | 563800USCON11IDS.pdf | 178470<br>df2e9a88cb893b28d18885e4b5f12372c89a1d08 | yes | 3 |
| | **Multipart Description/PDF files in .zip description** | | | | |
| | **Document Description** | | **Start** | **End** | |
| | Transmittal Letter | | 1 | 2 | |
| | Information Disclosure Statement (IDS) Form (SB08) | | 3 | 3 | |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | Non Patent Literature | 15179350NOA081516.pdf | 433387<br>8d7ed5b0d78f38ed7fd803301502263f2190fdc9 | no | 8 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 3 | Fee Worksheet (SB06) | fee-info.pdf | 30537<br>18a200d1f68c18f0a3bb6e84c00f133eb1497f02 | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | **Total Files Size (in bytes):** | 642394 | | |

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

| | | | |
|---|---|---|---|
| Applicant: | Lawrence Kates | Examiner: | Ojiako K. Nwugo |
| Serial No.: | 15/090,973 | Group Art Unit: | 2685 |
| Filed: | April 5, 2016 | Docket: | 563800USCON11 |
| Title: | Wireless Sensor Unit Communication Triggering and Management | | |

## SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

In compliance with the duty imposed by 37 C.F.R. § 1.56, and in accordance with 37 C.F.R. §§ 1.97 *et. seq*., the referenced materials are brought to the attention of the Examiner for consideration in connection with the above-identified patent application. Applicants respectfully request that this Supplemental Information Disclosure Statement be entered and the documents listed on the attached Form 1449 be considered by the Examiner and made of record. Pursuant to the provisions of MPEP 609, Applicants request that a copy of the 1449 form, initialed as being considered by the Examiner, be returned to the Applicants with the next official communication.

Pursuant to 37 C.F.R. § 1.97(e)(2), Applicant states that no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of the information disclosure statement.

Pursuant to 37 C.F.R. § 1.97(c)(2), Applicants have included the fee of $180.00 as set forth in 37 C.F.R. § 1.17(p). Please charge any additional fees or credit any overpayment to Deposit Account No. 50-4143.

Respectfully submitted,

Lawrence Kates

By their Representatives,

Date November 14, 2016 By /Matthew Johnson/
Matthew Johnson
Reg. No. 72,299

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 15/090,973 | 04/05/2016 | Lawrence Kates | 563800USCON11 | 5338 |

124746 7590 01/17/2017

Wolfe-SBMC
116 W. Pacific Avenue
Suite 300
Spokane, WA 99201

| EXAMINER | |
|---|---|
| NWUGO, OJIAKO K | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2685 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 01/17/2017 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docket@sbmc-law.com

| Applicant-Initiated Interview Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 15/090,973 | KATES, LAWRENCE | |
| | Examiner | Art Unit | |
| | OJIAKO NWUGO | 2685 | |

All participants (applicant, applicant's representative, PTO personnel):

(1) *OJIAKO NWUGO*. (3)_____.

(2) *Matt Johnson* . (4)_____.

Date of Interview: *29 December 2016*.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☐ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☐102 ☒103 ☐Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: *1*.

Identification of prior art discussed: _____.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

*Applicant proposed amendments to Claim 1,to include " a sensor configured to measure quantitative data about an ambient condition while sensor unit in in low-power mode" appear cited prior art . No agreement was reached on allowable subject matter.*.

**Applicant recordation instructions:** The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview

**Examiner recordation instructions**: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

| /OJIAKO NWUGO/<br>Primary Examiner, Art Unit 2685 | |
|---|---|

# Summary of Record of Interview Requirements

**Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record**
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

**Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews**
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

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The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

**Examiner to Check for Accuracy**

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

**UNITED STATES PATENT AND TRADEMARK OFFICE**

| | | | |
|---|---|---|---|
| APPLICANT: | Lawrence Kates | APPLICATION NO.: | 15/090,973 |
| EXAMINER: | Nwugo, Ojiako K. | CONFIRMATION NO.: | 5338 |
| DATE FILED: | April 5, 2016 | GROUP ART UNIT: | 2685 |
| TITLE: | Wireless Sensor Unit Communication Triggering and Management | | |

**RESPONSE TO FINAL OFFICE ACTION DATED NOVEMBER 10, 2016**

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

This communication is responsive to the Final Office Action dated November 10, 2016, concerning the above-identified application, and is filed concurrently with form PTO/SB/434 to request consideration under After Final Consideration Pilot Program 2.0.

Doc Code: A.NE.AFCP
Document Description: After Final Consideration Pilot Program Request

PTO/SB/434 (05-13)

## CERTIFICATION AND REQUEST FOR CONSIDERATION UNDER THE AFTER FINAL CONSIDERATION PILOT PROGRAM 2.0

| Practitioner Docket No.: | Application No.: | Filing Date: |
|---|---|---|
| 563800USCON11 | 15/090,973 | April 5, 2016 |
| **First Named Inventor:** | **Title:** | |
| Lawrence Kates | Wireless Sensor Unit Communication Triggering and Management | |

APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS CONSIDERATION UNDER THE AFTER FINAL CONSIDERATION PILOT PROGRAM 2.0 (AFCP 2.0) OF THE ACCOMPANYING RESPONSE UNDER 37 CFR 1.116.

1. The above-identified application is (i) an original utility, plant, or design nonprovisional application filed under 35 U.S.C. 111(a) [a continuing application (*e.g.*, a continuation or divisional application) is filed under 35 U.S.C. 111(a) and is eligible under (i)], or (ii) an international application that has entered the national stage in compliance with 35 U.S.C. 371(c).
2. The above-identified application contains an outstanding final rejection.
3. Submitted herewith is a response under 37 CFR 1.116 to the outstanding final rejection. The response includes an amendment to at least one independent claim, and the amendment does not broaden the scope of the independent claim in any aspect.
4. This certification and request for consideration under AFCP 2.0 is the only AFCP 2.0 certification and request filed in response to the outstanding final rejection.
5. Applicant is willing and available to participate in any interview requested by the examiner concerning the present response.
6. This certification and request is being filed electronically using the Office's electronic filing system (EFS-Web).
7. Any fees that would be necessary consistent with current practice concerning responses after final rejection under 37 CFR 1.116, *e.g.*, extension of time fees, are being concurrently filed herewith. [There is no additional fee required to request consideration under AFCP 2.0.]
8. By filing this certification and request, applicant acknowledges the following:

- Reissue applications and reexamination proceedings are not eligible to participate in AFCP 2.0.
- The examiner will verify that the AFCP 2.0 submission is compliant, *i.e.*, that the requirements of the program have been met (see items 1 to 7 above). For compliant submissions:
  - The examiner will review the response under 37 CFR 1.116 to determine if additional search and/or consideration (i) is necessitated by the amendment and (ii) could be completed within the time allotted under AFCP 2.0. If additional search and/or consideration is required but cannot be completed within the allotted time, the examiner will process the submission consistent with current practice concerning responses after final rejection under 37 CFR 1.116, *e.g.*, by mailing an advisory action.
  - If the examiner determines that the amendment does not necessitate additional search and/or consideration, or if the examiner determines that additional search and/or consideration is required and could be completed within the allotted time, then the examiner will consider whether the amendment places the application in condition for allowance (after completing the additional search and/or consideration, if required). If the examiner determines that the amendment does not place the application in condition for allowance, then the examiner will contact the applicant and request an interview.
    - The interview will be conducted by the examiner, and if the examiner does not have negotiation authority, a primary examiner and/or supervisory patent examiner will also participate.
    - If the applicant declines the interview, or if the interview cannot be scheduled within ten (10) calendar days from the date that the examiner first contacts the applicant, then the examiner will proceed consistent with current practice concerning responses after final rejection under 37 CFR 1.116.

| Signature | Date |
|---|---|
| /Matthew Johnson/ | February 9, 2017 |
| **Name (Print/Typed)** Matthew Johnson | **Practitioner Registration No.** 72299 |

***Note**: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.*

[✓] * Total of 1 forms are submitted.

# Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

| Electronic Acknowledgement Receipt | |
|---|---|
| **EFS ID:** | 28316704 |
| **Application Number:** | 15090973 |
| **International Application Number:** | |
| **Confirmation Number:** | 5338 |
| **Title of Invention:** | Wireless Sensor Unit Communication Triggering and Management |
| **First Named Inventor/Applicant Name:** | Lawrence Kates |
| **Customer Number:** | 124746 |
| **Filer:** | William Breen/Whitney Soule |
| **Filer Authorized By:** | William Breen |
| **Attorney Docket Number:** | 563800USCON11 |
| **Receipt Date:** | 09-FEB-2017 |
| **Filing Date:** | 05-APR-2016 |
| **Time Stamp:** | 17:55:46 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| Submitted with Payment | no |
|---|---|

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | | 563800USCON11_Response.pdf | 188633<br>a4ee83d8e2462387728afa4c7a9f2db39b38f5c1 | yes | 16 |

| | Multipart Description/PDF files in .zip description | | |
|---|---|---|---|
| | **Document Description** | **Start** | **End** |
| | Applicant Arguments/Remarks Made in an Amendment | 9 | 16 |
| | Applicant summary of interview with examiner | 8 | 8 |
| | Claims | 2 | 7 |
| | Response After Final Action | 1 | 1 |

| | | | | | |
|---|---|---|---|---|---|
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | After Final Consideration Program Request | 563800USCON11_AFCP_Request.pdf | 226521<br>fe7f5552600ed41e42f0dbe202dd04d8f5c5144e | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | **Total Files Size (in bytes):** | 415154 | | |

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**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

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**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

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2005/0030175 to Wolfe ("Wolfe"). (*Office Action*, p. 7). Claims 11 and 16-20 rejected under 35 U.S.C. § 103(a) as being unpatentable over Hakanen, Marman, Agrawal, and Okubo and further in view of U.S. Patent Application Pub. No. 2004/0233855 to Gutierrez et al. ("Gutierrez"). (*Office Action*, p. 8).

Applicant makes no representation that cited references are prior art. This response and any remarks, comments, or amendments included herein are not intended to be, and are not interpreted to be, an admission that the cited references are prior art or that the rejections are proper or conceded. Applicant reserves the right to dispose of any cited references under 35 U.S.C. § 102 and/or 35 U.S.C. § 103, including but not limited to, antedating one or more of the cited references.

**Claim 1**

Independent claim 1 recites:

A wireless ambient sensor unit, comprising:

a wireless transceiver;

a sensor configured to measure quantitative data about an ambient condition;

a controller in communication with the wireless transceiver and the sensor, the controller configured to:

compare the quantitative data measured about the ambient condition to a stored threshold value while the wireless ambient sensor unit is in a low-power mode;

exit the low-power mode in response to the comparison of the quantitative data with the stored threshold value; and

in response to the exit of the low-power mode, transmit the quantitative data measured about the ambient condition as one or more messages, using the wireless transceiver, the quantitative data being transmitted while the wireless ambient sensor unit is out of the low-power mode and each message includes an address that identifies

the wireless ambient sensor unit, a checksum, and an authenticity portion for use in verifying an authenticity of the message.

Applicant submits that neither the combination of Hakanen, Marman, Agrawal, and Okubo, nor the combination of Okubo and Agrawal disclose, teach, or in any way suggest the subject matter of claim 1.

**Okubo**

In one rejection (Office Action, p. 10) to claim 1, the Office Action relies on Okubo to disclose all elements of claim 1 except for a checksum and authenticity portion. However, Okubo actually also fails to disclose exiting a low-power mode in response to a comparison of quantitative data and, responsive to such exit, transmitting the measured quantitative data.

Okubo (and Hakanen) are directed to placing temperature sensors in vehicle tires to reliably detect gradual tire failure (Hakanen, [0030], Okubo [0003]-[0004]). Immediate sensor information (*i.e.*, quantitative sensor data responsive to an emergency condition) is obviously not necessary as drivers of such vehicles typically appreciate when a tire blow-out or flat tire occurs (Hakanen, [0030]). In contrast, the subject application (see, e.g., Specification [0014]) and pending claims are directed to responsively providing sensor measurements (*i.e.*, quantitative data) to emergency situations.

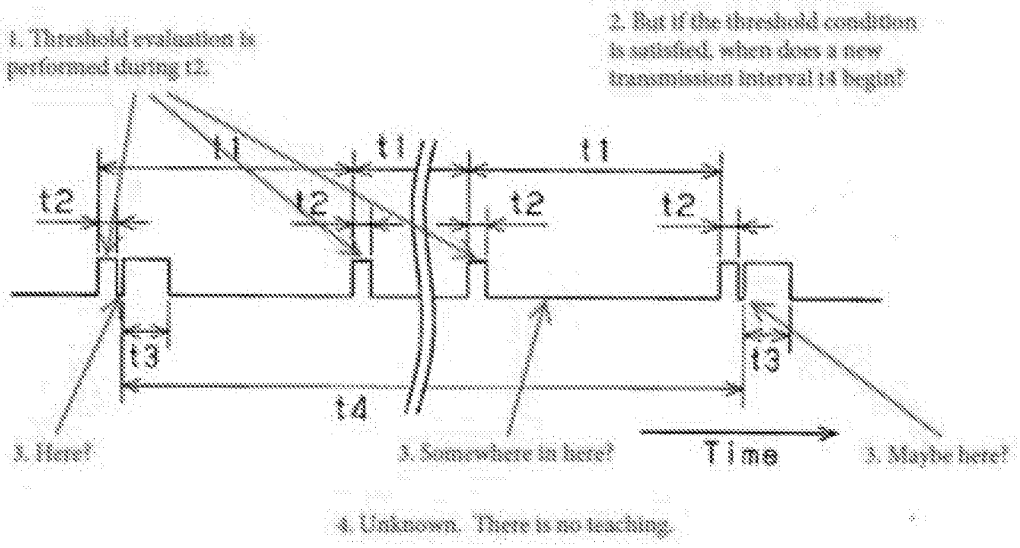
Okubo does not disclose such providing of sensor data. Okubo describes transmission mode changes, but does not go the extra step of proactively transmitting sensor data responsive to such mode changes. Specifically, Okubo describes that a 'mode change' occurs whereby, in response to a temperature measurement exceeding a threshold, the transmission time interval changes. *E.g.*, the transmission interval may change from once every ten minutes to once every

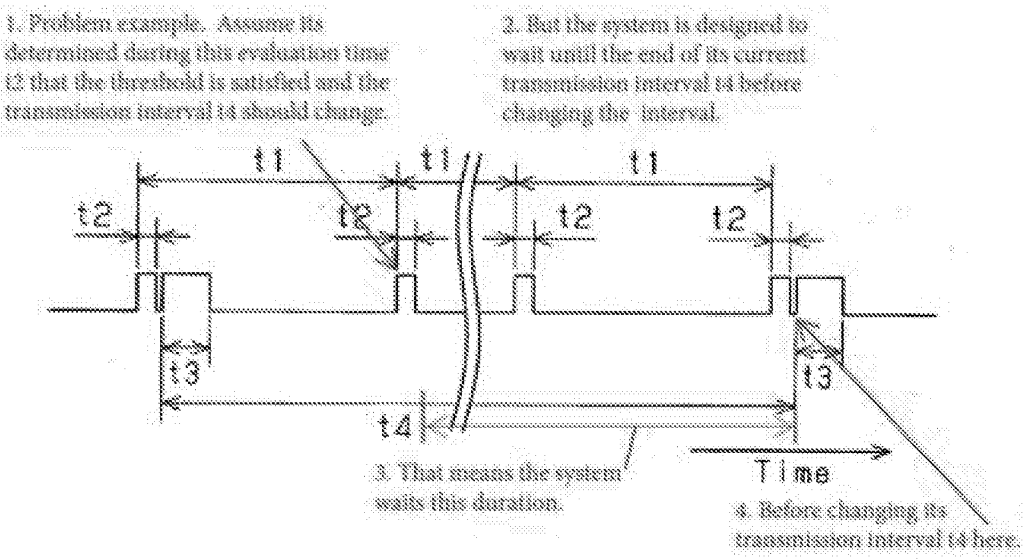
five minutes (Okubo, [0038]-[0039]). While switching transmission intervals may suffice for detecting gradual tire failure, it is obviously insufficient to respond to emergency situations.

While not relied on in the Office Action, Okubo also describes switching to a mode whereby transmission is continuously performed (Okubo, [0046]). However, even that disclosure is not the same as the claimed responsive communication of sensor data. Specifically, the disclosure regarding Fig. 3 of Okubo describes the evaluation time t2, transmitting time t3, and transmission interval t4. While Okubo describes switching to a continuous transmission mode, it fails to disclose *when* such mode switch becomes effective. That is, immediately, after a current transmission interval t4, at some point during a current transmission interval t4, or some other time?

Accordingly, although a temperature threshold may be determined to be exceeded during, e.g., the second t2 from the left of Fig. 3, the transmitting mode may not change until the end of t4. The effect is that even though the transmitting mode changes to a continuous transmission, it does not do so until the expiration of t4 (i.e., nearly 10 minutes). Again, such a delay may be sufficient for detecting gradual tire failure, but such delay is obviously unacceptable in emergency situations. This is the practical and tangible difference between simply changing transmission modes (Okubo) and going that extra step to transmit data responsive to exiting a low-power mode (pending claims).

This is an important point to understand. Two annotated versions of Okubo's Fig. 3 are presented as follows to assist:



For at least these reasons, Okubo does not teach nor suggest, "in response to the exit of the low-power mode, transmit the quantitative data measured about the ambient condition" as recited in claim 1.

**Hakanen**

In the other rejection to claim 1 (Office Action, p. 4), the Office Action relies on Hakanen to disclose all elements of claim 1 except for a variety including "in response to the exit of the low-power mode, transmit the quantitative data measured about the ambient condition." Applicant agrees that Hakanen does not disclose this element. The Office Action points to Okubo to satisfy this deficiency (Office Action, p.5). Applicant disagrees for at least the reasons provided above under Okubo.

**Agrawal**

In the rejections to claim 1 (Office Action, pp. 4, 11), the Office Action recognizes that both Hakanen and Okubo fail to disclose that a message includes a checksum and an authenticity portion, but then relies on Agrawal to satisfy these deficiencies. To support this, the Office Action indicates that it would have been obvious in order to "enhance system security" (*id*). Applicant respectfully disagrees.

Hakanen and Okubo actually teach against the proposed modification. Specifically, both Hakanen and Okubo describe tire pressure monitoring systems where the sensors are mounted inside tires and the tires are mounted to a vehicle and in close proximity to a receiver, in either the other tires or the vehicle. On its face, the close proximity of the sensors in these systems significantly diminishes any need or desire for authentication. More importantly,

perhaps, is that Okubo (Okubo, [0028]) and Hakanen (Hakanen, [0031]) describe that the design considerations are motivated by battery capacity. Including authentication information in the transmissions of Hakanen and/or Okubo would necessarily make messages longer, communications more complex, and accordingly battery life shorter. A result that is clearly against the teachings of these references.

Further, modifying Hakanen as proposed would render Hakanen's disclosed systems unsatisfactory for its intended purpose. Specifically, in Agrawal, the ability of the sending node to send authenticated communications is predicated upon the authentication of the sending node by a cluster head (Agrawal, [0033], [0061]).

> **[0033]** Strong ***authentication of packets sent between nodes of different clusters in a two-tier ad hoc network is provided by the cluster heads. The cluster head authenticates a node that enters the cluster.*** Thereafter, when the node requests a session with a node in another cluster, the cluster head negotiates a session secret key (SSK) with the corresponding cluster head of the receiving node. Further, ***the cluster head provides authentication tags for the sending node to use with each packet.*** The sending node calculates a check result from a number of the authentication tags, which are then encrypted with the SSK, so that the receiving node can authenticate the number of packets. (emphasis added)

However, Hakanen describes communications between vehicle tires, and between a mobile phone and any of the tires, without a central node that coordinates communication: "mobile phone 28 in fact is communicatively connectable to any one of the tires 4 mounted to vehicle 6 at any time. Similarly, every tire mounted to vehicle 6 is in direct communication with every other tire so that the respective information from all of the tires of the vehicle are exchanged among the tires" (Hakanen, [0036]). Accordingly, the ability to communicate between nodes in Hakanen is distributed among the nodes without a central coordinating node (i.e., Agrawal's "cluster head"). Modifying Hakanen with such a cluster head would prevent

the tires from being able to directly communicate with one another, thereby rendering Hakanen unsatisfactory for its purpose of direct tire-to-tire communication.

For at least these reasons, one skilled in the art would not be motivated to modify Hakanen and Okubo with the teachings of Agrawal as suggested in the Office Action, and thus the Office Action has failed to establish a *prima facie* case of obviousness with respect to claim 1. Accordingly, neither the Hakanen, Marman, Agrawal, and Okubo combination, nor the Okubo and Agrawal combination support the §103 rejections of claim 1 as amended for at least the reasons described above, and Applicant requests that the rejection be withdrawn. Additionally, dependent claims 2-12 are allowable as depending from claim 1, and the §103 rejections should be withdrawn. To the extent that dependent claims 9 and 11 are further rejected, Wolfe and/or Gutierrez are not seen to add anything of significance to the rejections of independent claim 1 and the §103 rejections should be withdrawn.

**Claims 13 and 17**

Independent claim 13 and amended independent claim 17 recite features that are consistent (although not identical) to the features recited in claim 1. Claim 13 recites, "exiting the low-power mode in response to the comparison of the quantitative data with the stored threshold value." Amended Claim 17 recites, "exit the low-power mode in response to the comparison of the quantitative data with the stored threshold value." As discussed above in response to the rejection of claim 1, neither the combination of Hakanen, Marman, Agrawal, and Okubo, nor the combination of Okubo and Agrawal disclose, teach, or in any way suggest the subject matter of independent claim 13 and amended independent claim 17.

Accordingly, neither the Hakanen, Marman, Agrawal, and Okubo combination, nor the Okubo and Agrawal combination support the §103 rejections of independent claim 13 and

amended independent claim 17 for at least the reasons described above, and Applicant requests that the rejections be withdrawn. Additionally, dependent claims 14-16 and 18-20 are allowable as depending from respective independent claims 13 and 17, and the §103 rejections should be withdrawn. To the extent that dependent claims 16 and 18-20 are further rejected, Gutierrez is not seen to add anything of significance to the rejection of independent claims 13 and 17, and the §103 rejection should be withdrawn.

**Conclusion**

Applicant submits that all objections and/or rejections of the pending claims have been addressed, and respectfully requests issuance of the application. If any issues remain that preclude issuance of the application, the Examiner is requested to contact the undersigned agent before issuing a subsequent Action.

Respectfully submitted,

Dated: February 9, 2017 By: /Matthew Johnson/

Matthew Johnson
Reg. No. 72,299
(509) 755-7267

## REMARKS

Applicant respectfully requests reconsideration and allowance of the application. Claims 1-20 are pending, of which claim 17 is amended. Specifically, Applicant respectfully requests reconsideration of the basis for rejections over Okubo and Hakanen in view of the following appreciations of those cited references.

### Interview Summary

Applicant appreciates the Examiner's time to conduct the telephone interview on December 29, 2016. The pending claims and cited references were discussed. Although no agreement was reached at the time, upon Applicant's further review of the cited references Applicant submits that the pending claims are not rendered obvious over the cited references for at least the following reasons.

### § 103 Claim Rejections

Claims 1-8, 10, 12-15, and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Pub. No. 2002/0030592 to Hakanen et al. ("Hakanen") in view of U.S. Patent No. 6,624,750 to Marman et al. ("Marman") further in view of U.S. Patent Application Pub. No. 2002/0124169 to Agrawal et al. ("Agrawal") and further in view of U.S. Patent Application Pub. No. 2004/0164855 to Okubo ("Okubo"). (*Office Action*, p. 3). Claims 1-3, 13, and 17 stand alternately rejected under 35 U.S.C. § 103(a) as being unpatentable over Okubo in view of Agrawal. (*Office Action*, p. 9). Claim 9 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Hakanen, Marman, Agrawal, and Okubo and further in view of U.S. Patent Application Pub. No.

## LIST OF CLAIMS

This list of claims replaces all prior versions and listings.

1. (Previously Presented) A wireless ambient sensor unit, comprising:

a wireless transceiver;

a sensor configured to measure quantitative data about an ambient condition;

a controller in communication with the wireless transceiver and the sensor, the controller configured to:

compare the quantitative data measured about the ambient condition to a stored threshold value while the wireless ambient sensor unit is in a low-power mode;

exit the low-power mode in response to the comparison of the quantitative data with the stored threshold value; and

in response to the exit of the low-power mode, transmit the quantitative data measured about the ambient condition as one or more messages, using the wireless transceiver, the quantitative data being transmitted while the wireless ambient sensor unit is out of the low-power mode and each message includes an address that identifies the wireless ambient sensor unit, a checksum, and an authenticity portion for use in verifying an authenticity of the message.

2. (Original) The wireless ambient sensor unit of claim 1, wherein the controller is further configured for at least a portion of the address to be programmed into the wireless ambient sensor unit during an installation process.

3. (Original) The wireless ambient sensor unit of claim 1, wherein power is not provided to the wireless transceiver in the low-power mode.

4. (Original) The wireless ambient sensor unit of claim 1, wherein the controller is further configured to:

receive a message, via the wireless transceiver to reprogram at least a portion of the address; and

reprogram at least the portion of the address based on the received message.

5. (Previously Presented) The wireless ambient sensor unit of claim 1, wherein the wireless transceiver is configured to use a spread spectrum technique for transmitting the quantitative data measured about the ambient condition.

6. (Original) The wireless ambient sensor unit of claim 1, wherein the controller is further configured to:

exit the low-power mode on a periodic basis;

transmit a status message using the wireless transceiver;

for a predefined period of time following the transmission of the status message, enter a receive mode to wait for a command to be received via the wireless transceiver; and

enter the low power mode following expiration of the predefined period of time.

7. (Original) The wireless ambient sensor unit of claim 1, wherein the ambient condition is one of a level of carbon monoxide or a level of smoke.

8. (Original) The wireless ambient sensor unit of claim 1, further comprising:

a reset switch in communication with the controller, and wherein the controller is further configured to:

in response to actuation of the reset switch, cause the wireless ambient sensor unit to enter a receive mode to receive the address, via the wireless transceiver, to program into the wireless ambient sensor unit.

9. (Previously Presented) The wireless ambient sensor unit of claim 1, further comprising:

a tamper sensor in communication with the controller, and wherein the controller is further configured to:

receive a tamper indication from the tamper sensor indicative of tampering with the wireless ambient sensor unit;

in response to the reception of the tamper indication, exit the low-power mode; and

transmit a message including an indication of the tampering via the wireless transceiver.

10. (Original) The wireless ambient sensor unit of claim 1, further comprising an audio output device, and wherein the controller is in communication with the audio output device.

11. (Original) The wireless ambient sensor unit of claim 1, wherein the controller is further configured to:

measure a signal strength received using the wireless transceiver; and

route transmission of the one or more messages based on the measured signal strength.

12. (Original) The wireless ambient sensor unit of claim 1, wherein the controller is further configured to:

prior to the transmission of the one or more messages, listen to a radio frequency channel, using the wireless transceiver, to determine if the radio frequency channel is in use; and

in response to the determination that the radio frequency channel is not is use, transmit the one or more messages via the radio frequency channel.

13. (Previously Presented) A method for using a wireless ambient sensor unit, the method comprising:

measuring an ambient condition with a sensor of the wireless ambient sensor;

comparing quantitative data measured about the ambient condition to a stored threshold value while the wireless ambient sensor unit is in a low-power mode;

exiting the low-power mode in response to the comparison of the quantitative data with the stored threshold value; and

in response to said exiting the low-power mode, transmitting, with a wireless transceiver of the wireless ambient sensor unit, one or more messages indicative of the quantitative data measured about the ambient condition, the quantitative data being transmitted while the wireless ambient sensor unit is out of the low-power mode and each message including an address that identifies the wireless ambient sensor unit, a checksum, and an authenticity portion for use in verifying an authenticity of the message.

14. (Original) The method of claim 13, further comprising:

exiting the low-power mode on a periodic basis;

transmitting a status message using the wireless transceiver;

for a predefined period of time following said transmitting the status message, entering a receive mode to wait for a command to be received via the wireless transceiver; and

entering the low power mode following expiration of the predefined period of time.

15. (Original) The method of claim 13, wherein the ambient condition is one of a level of carbon monoxide or a level of smoke.

16. (Original) The method of claim 13, further comprising:

measuring a signal strength received using the wireless transceiver; and

routing transmission of the one or more messages based on the measured signal strength.

17. (Currently Amended) A system for sensing an ambient condition, the system comprising:

a wireless ambient sensor unit configured to:

measure the ambient condition with a sensor;

compare quantitative data measured about the ambient condition to a stored threshold value[[,]] while the wireless ambient sensor unit is in a low-power mode;

exit the low-power mode in response to the comparison of the quantitative data with the stored threshold value; and

in response to the exit of the low-power mode, transmit, with a wireless transceiver, one or more messages indicative of the quantitative data measured about the ambient condition, the quantitative data being transmitted while the wireless

ambient sensor unit is out of the low-power mode and each message includes an address that identifies the wireless ambient sensor unit, a checksum, and an authenticity portion for use in verifying an authenticity of the message.

18. (Original) The system of claim 17, further comprising:

a repeater device configured to:

receive from the wireless ambient sensor unit, the one or more messages indicative of the data about the ambient condition; and

transmit the one or more messages to a base unit.

19. (Original) The system of claim 18, wherein the repeater device is further configured to:

attach an address of the repeater device to the one or more messages prior to the transmission of the one or more messages to the base unit.

20. (Original) The system of claim 18, wherein the repeater device is further configured to:

compare the address in the one or more messages received from the wireless ambient sensor unit to a stored database that includes a plurality of sensor addresses; and

ignore the one or more messages based on the address not being included in the plurality of sensor addresses.

PTO/SB/06 (09-11)
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| PATENT APPLICATION FEE DETERMINATION RECORD<br>Substitute for Form PTO-875 | Application or Docket Number<br>15/090,973 | Filing Date<br>04/05/2016 | ☐ To be Mailed |
|---|---|---|---|

**ENTITY**: ☒ LARGE ☐ SMALL ☐ MICRO

## APPLICATION AS FILED – PART I

| FOR | (Column 1) NUMBER FILED | (Column 2) NUMBER EXTRA | RATE ($) | FEE ($) |
|---|---|---|---|---|
| ☐ BASIC FEE (37 CFR 1.16(a), (b), or (c)) | N/A | N/A | N/A | |
| ☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m)) | N/A | N/A | N/A | |
| ☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q)) | N/A | N/A | N/A | |
| TOTAL CLAIMS (37 CFR 1.16(i)) | minus 20 = | * | X $ = | |
| INDEPENDENT CLAIMS (37 CFR 1.16(h)) | minus 3 = | * | X $ = | |
| ☐ APPLICATION SIZE FEE (37 CFR 1.16(s)) | If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). | | | |
| ☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) | | | | |
| * If the difference in column 1 is less than zero, enter "0" in column 2. | | | TOTAL | |

## APPLICATION AS AMENDED – PART II

AMENDMENT **02/09/2017**

| | (Column 1) CLAIMS REMAINING AFTER AMENDMENT | | (Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR | (Column 3) PRESENT EXTRA | RATE ($) | ADDITIONAL FEE ($) |
|---|---|---|---|---|---|---|
| Total (37 CFR 1.16(i)) | * 20 | Minus | ** 20 | = 0 | X $80 = | 0 |
| Independent (37 CFR 1.16(h)) | * 3 | Minus | ***3 | = 0 | X $420 = | 0 |
| ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | |
| ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | |
| | | | | | TOTAL ADD'L FEE | 0 |

AMENDMENT

| | (Column 1) CLAIMS REMAINING AFTER AMENDMENT | | (Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR | (Column 3) PRESENT EXTRA | RATE ($) | ADDITIONAL FEE ($) |
|---|---|---|---|---|---|---|
| Total (37 CFR 1.16(i)) | * | Minus | ** | = | X $ = | |
| Independent (37 CFR 1.16(h)) | * | Minus | *** | = | X $ = | |
| ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | |
| ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | |
| | | | | | TOTAL ADD'L FEE | |

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
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124746 7590 03/16/2017

Wolfe-SBMC
116 W. Pacific Avenue
Suite 300
Spokane, WA 99201

| EXAMINER | |
|---|---|
| NWUGO, OJIAKO K | |
| ART UNIT | PAPER NUMBER |
| 2685 | |

DATE MAILED: 03/16/2017

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 15/090,973 | 04/05/2016 | Lawrence Kates | 563800USCON11 | 5338 |

TITLE OF INVENTION: WIRELESS SENSOR UNIT COMMUNICATION TRIGGERING AND MANAGEMENT

| APPLN. TYPE | ENTITY STATUS | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|---|---|---|---|---|---|---|
| nonprovisional | UNDISCOUNTED | $960 | $0 | $0 | $960 | 06/16/2017 |

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Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

**Certificate of Mailing or Transmission**
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

| |
|---|
| (Depositor's name) |
| (Signature) |
| (Date) |

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 15/090,973 | 04/05/2016 | Lawrence Kates | 563800USCON11 | 5338 |

TITLE OF INVENTION: WIRELESS SENSOR UNIT COMMUNICATION TRIGGERING AND MANAGEMENT

| APPLN. TYPE | ENTITY STATUS | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|---|---|---|---|---|---|---|
| nonprovisional | UNDISCOUNTED | $960 | $0 | $0 | $960 | 06/16/2017 |

| EXAMINER | ART UNIT | CLASS-SUBCLASS |
|---|---|---|
| NWUGO, OJIAKO K | 2685 | 340-870390 |

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. The following fee(s) are submitted:
- ❑ Issue Fee
- ❑ Publication Fee (No small entity discount permitted)
- ❑ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
- ❑ A check is enclosed.
- ❑ Payment by credit card. Form PTO-2038 is attached.
- ❑ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
- ❑ Applicant certifying micro entity status. See 37 CFR 1.29 — NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
- ❑ Applicant asserting small entity status. See 37 CFR 1.27 — NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
- ❑ Applicant changing to regular undiscounted fee status. — NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____



PTOL-85 Part B (10-13) Approved for use through 10/31/2013. OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 15/090,973 | 04/05/2016 | Lawrence Kates | 563800USCON11 | 5338 |

124746 7590 03/16/2017

Wolfe-SBMC
116 W. Pacific Avenue
Suite 300
Spokane, WA 99201

| EXAMINER | |
|---|---|
| NWUGO, OJIAKO K | |
| **ART UNIT** | **PAPER NUMBER** |
| 2685 | |

DATE MAILED: 03/16/2017

**Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)**
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

## OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

## Privacy Act Statement

**The Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

| Notice of Allowability | Application No. 15/090,973 | Applicant(s) KATES, LAWRENCE | |
|---|---|---|---|
| | Examiner OJIAKO NWUGO | Art Unit 2685 | AIA (First Inventor to File) Status Yes |

***-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--***

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *AFCP of 2/9/2017*.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on_____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are *1-20*. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   **Certified copies:**

   a) ☐ All b) ☐ Some *c) ☐ None of the:
   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   **Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
5. ☐ Examiner's Amendment/Comment
6. ☐ Examiner's Statement of Reasons for Allowance
7. ☒ Other *PTO 2323*.

/OJIAKO NWUGO/
Primary Examiner, Art Unit 2685

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | **Application Number** | 15/090,973 |
| | **Filing Date** | Apr 5, 2016 |
| | **First Named Inventor** | Lawrence Kates |
| | **Art Unit** | 2685 |
| | **Examiner Name** | Ojiako K. Nwugo |
| | **Attorney Docket Number** | 563800USCON11 |

| U.S. PATENTS | | | |
|---|---|---|---|
| Examiner Initial* | Patent Number | Issue Date | Patentee or Applicant |
| | US-9474023 | Oct 18, 2016 | Kates, Lawrence |

| U.S. PATENT APPLICATION PUBLICATIONS | | | |
|---|---|---|---|
| Examiner Initial* | Publication Number | Publication Date | Patentee or Applicant |
| | US-20160267761 | Sep 15, 2016 | Kates, Lawrence |
| | US-20160286490 | Sep 29, 2016 | Kates, Lawrence |

| NON-PATENT LITERATURE DOCUMENTS | |
|---|---|
| Examiner Initials* | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. |
| | "Notice of Allowance", Application Number 15/179,350, 08/15/2016, 8 pages |

| EXAMINER SIGNATURE | | | |
|---|---|---|---|
| Examiner Signature | /OJIAKO K NWUGO/ | Date Considered | 02/27/2017 |

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /O.K.N/

| AFCP 2.0 Decision | Application No. | Applicant(s) |
|---|---|---|
| | 15/090,973 | KATES, LAWRENCE |
| | Examiner | Art Unit |
| | OJIAKO NWUGO | 2685 |

This is in response to the After Final Consideration Pilot request filed 09 February 2017.

1. **Improper Request** – The AFCP 2.0 request is improper for the following reason(s) and the after final amendment submitted with the request will be treated under pre-pilot procedure.

   ☐ An AFCP 2.0 request form PTO/SB/434 (or equivalent document) was not submitted.

   ☐ A non-broadening amendment to at least one independent claim was not submitted.

   ☐ A proper AFCP 2.0 request was submitted in response to the most recent final rejection.

   ☐ Other:

2. **Proper Request**

   **A.** After final amendment submitted with the request will not be treated under AFCP 2.0.
   The after final amendment cannot be reviewed and a search conducted within the guidelines of the pilot program.

   ☒ The after final amendment will be treated under pre-pilot procedure.

   **B.** Updated search and/or completed additional consideration.
   The examiner performed an updated search and/or completed additional consideration of the after final amendment within the time authorized for the pilot program. The result(s) of the updated search and/or completed additional consideration are:

   ☐ 1. All of the rejections in the most recent final Office action are overcome and a Notice of Allowance is issued herewith.

   ☐ 2. The after final amendment would not overcome all of the rejections in the most recent final Office action. See attached interview summary for further details.

   ☐ 3. The after final amendment was reviewed, and it raises a new issue(s). See attached interview summary for further details.

   ☐ 4. The after final amendment raises new issues, but would overcome all of the rejections in the most recent final Office action. A decision on determining allowability could not be made within the guidelines of the pilot. See attached interview summary for further details, including any newly discovered prior art.

   ☐ 5. Other:

   Examiner Note: Please attach an interview summary when necessary as described above.

| Issue Classification | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 15090973 | KATES, LAWRENCE |
| | **Examiner** | **Art Unit** |
| | OJIAKO NWUGO | 2685 |

| CPC | | | | | | |
|---|---|---|---|---|---|---|
| **Symbol** | | | | | **Type** | **Version** |
| H04W | | 52 | / | 0225 | F | 2013-01-01 |
| G08B | | 1 | / | 08 | I | 2013-01-01 |
| G08B | | 25 | / | 009 | I | 2013-01-01 |
| G08B | | 17 | / | 10 | I | 2013-01-01 |
| G06F | | 1 | / | 3209 | I | 2013-01-01 |
| G08B | | 25 | / | 10 | I | 2013-01-01 |
| G08B | | 17 | / | 00 | I | 2013-01-01 |
| G08B | | 25 | / | 001 | I | 2013-01-01 |
| Y02B | | 60 | / | 50 | A | 2013-01-01 |
| H04Q | | 9 | / | 02 | I | 2013-01-01 |
| G08B | | 25 | / | 007 | I | 2013-01-01 |
| G08B | | 21 | / | 182 | I | 2013-01-01 |
| H04W | | 84 | / | 18 | I | 2013-01-01 |
| G08B | | 21 | / | 14 | I | 2013-01-01 |
| G08B | | 13 | / | 04 | I | 2013-01-01 |
| H04Q | | 9 | / | 00 | I | 2013-01-01 |

| CPC Combination Sets | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Symbol** | | | | | **Type** | **Set** | **Ranking** | **Version** |
| | | | / | | | | | |
| | | | / | | | | | |

| NONE | | **Total Claims Allowed:** | |
|---|---|---|---|
| (Assistant Examiner) | (Date) | 20 | |
| /OJIAKO NWUGO/<br>Primary Examiner.Art Unit 2685 | 02/27/2017 | O.G. Print Claim(s) | O.G. Print Figure |
| (Primary Examiner) | (Date) | 1 | 6 |

| Issue Classification | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 15090973 | KATES, LAWRENCE |
| | **Examiner** | **Art Unit** |
| | OJIAKO NWUGO | 2685 |

| US ORIGINAL CLASSIFICATION | | INTERNATIONAL CLASSIFICATION | |
|---|---|---|---|
| CLASS | SUBCLASS | CLAIMED | NON-CLAIMED |
| 340 | 870.39 | G 0 8 C 19 / 04 | |

**CROSS REFERENCE(S)**

| CLASS | SUBCLASS (ONE SUBCLASS PER BLOCK) | | | | |
|---|---|---|---|---|---|
| 340 | 870.3 | | | | |

| NONE | | Total Claims Allowed: 20 | |
|---|---|---|---|
| (Assistant Examiner) | (Date) | | |
| /OJIAKO NWUGO/ Primary Examiner.Art Unit 2685 | 02/27/2017 | O.G. Print Claim(s) 1 | O.G. Print Figure 6 |
| (Primary Examiner) | (Date) | | |

| Issue Classification | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 15090973 | KATES, LAWRENCE |
| | **Examiner** | **Art Unit** |
| | OJIAKO NWUGO | 2685 |

☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

| Final | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | | 17 | | | | | | | | | | | | |
| | 2 | | 18 | | | | | | | | | | | | |
| | 3 | | 19 | | | | | | | | | | | | |
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| | 15 | | | | | | | | | | | | | | |
| | 16 | | | | | | | | | | | | | | |

| NONE<br><br>(Assistant Examiner) (Date) | **Total Claims Allowed:**<br>20 | |
|---|---|---|
| /OJIAKO NWUGO/<br>Primary Examiner.Art Unit 2685 02/27/2017<br><br>(Primary Examiner) (Date) | O.G. Print Claim(s)<br>1 | O.G. Print Figure<br>6 |

**UNITED STATES PATENT AND TRADEMARK OFFICE**

| | | | |
|---|---|---|---|
| APPLICANT: | Lawrence Kates | APPLICATION NO.: | 15/090,973 |
| EXAMINER: | Nwugo, Ojiako K. | CONFIRMATION NO.: | 5338 |
| DATE FILED: | April 5, 2016 | GROUP ART UNIT: | 2685 |
| TITLE: | Wireless Sensor Unit Communication Triggering and Management | | |

**RESPONSE TO FINAL OFFICE ACTION DATED NOVEMBER 10, 2016**

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

This communication is responsive to the Final Office Action dated November 10, 2016, concerning the above-identified application, and is filed concurrently with form PTO/SB/434 to request consideration under After Final Consideration Pilot Program 2.0.

OK TO ENTER: /O.K.N/

| Search Notes | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 15090973 | KATES, LAWRENCE |
| | Examiner | Art Unit |
| | OJIAKO NWUGO | 2685 |

| CPC- SEARCHED | | |
|---|---|---|
| Symbol | Date | Examiner |
| G08B1/08 G06F1/3209 G08B17/00 G08B25/009 G08B25/001 G08B17/10 G08B25/10 with text | 6/8/2016 | O.N. |
| G08B1/08 G06F1/3209 G08B17/00 G08B25/009 G08B25/001 G08B17/10 G08B25/10 | 11/2/2016 | O.N. |
| G08B1/08 G08B17/00 G08B25/009 G08B25/001 G08B17/10 G08B25/10 | 2/27/2017 | O.N. |
| G06F1/3209 | 2/27/2017 | O.N. |

| CPC COMBINATION SETS - SEARCHED | | |
|---|---|---|
| Symbol | Date | Examiner |
| | | |

| US CLASSIFICATION SEARCHED | | | |
|---|---|---|---|
| Class | Subclass | Date | Examiner |
| 340 | 573.1,870.39 with text | 6/8/2016 | O.N. |
| 340 | 573.1,870.39 | 11/2/2016 | O.N. |
| 340 | 573.1,870.39 | 2/27/2017 | O.N. |

| SEARCH NOTES | | |
|---|---|---|
| Search Notes | Date | Examiner |
| See attached search histtory | 6/8/2016 | O.N. |
| G08B1/08 G06F1/3209 G08B17/00 G08B25/009 G08B25/001 G08B17/10 G08B25/10 with text | 11/2/2016 | O.N. |
| 340/573.1,870.39 with text | 11/2/2016 | O.N. |
| See attached search history | 11/2/2016 | O.N. |
| G08B1/08 G08B17/00 G08B25/009 G08B25/001 G08B17/10 G08B25/10 with text | 2/27/2017 | O.N. |
| G06F1/3209 with text | 2/27/2017 | O.N. |
| 340/573.1,870.39 with text | 2/27/2017 | O.N. |
| See attached search history, Inventor name search has been completed. | 2/27/2017 | O.N. |

| | |
|---|---|
| | /OJIAKO NWUGO/<br>Primary Examiner.Art Unit 2685 |

| INTERFERENCE SEARCH | | | |
|---|---|---|---|
| **US Class/ CPC Symbol** | **US Subclass / CPC Group** | **Date** | **Examiner** |
| | Same as searched | 2/27/2017 | O.N. |

| | |
|---|---|
| | /OJIAKO NWUGO/<br>Primary Examiner.Art Unit 2685 |

Respectfully submitted,

Lawrence Kates

By their Representatives,

Date March 20, 2017 By /Matthew Johnson/

Matthew Johnson
Reg. No. 72,299

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | **Application Number** | 15/090,973 |
| | **Filing Date** | Apr 5, 2016 |
| | **First Named Inventor** | Lawrence Kates |
| | **Art Unit** | 2685 |
| | **Examiner Name** | Ojiako K. Nwugo |
| | **Attorney Docket Number** | 563800USCON11 |

| U.S. PATENTS | | | |
|---|---|---|---|
| Examiner Initial* | Patent Number | Issue Date | Patentee or Applicant |
| | US-4918690 | Apr 17, 1990 | Markkula, Jr, Armas C., et al. |
| | US-5428964 | Jul 4, 1995 | Lobdell, Vincent G. |
| | | | |
| **U.S. PATENT APPLICATION PUBLICATIONS** | | | |
| Examiner Initial* | Publication Number | Publication Date | Patentee or Applicant |
| | US-20020012323 | Jan 31, 2002 | Petite, Thomas D., et al. |
| | US-20080059622 | Mar 6, 2008 | Hite, Thomas D., et al. |
| | | | |
| **NON-PATENT LITERATURE DOCUMENTS** | | | |
| Examiner Initials* | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | | |
| | "Final Office Action", Application Number 14/534,848, 01/26/2017, 10 pages | | |
| | "Final Office Action", Application Number 15/161,880, 12/20/2016, 12 pages | | |

| EXAMINER SIGNATURE | | | |
|---|---|---|---|
| Examiner Signature | | Date Considered | |

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | 15090973 |
| **Filing Date:** | 05-Apr-2016 |
| **Title of Invention:** | WIRELESS SENSOR UNIT COMMUNICATION TRIGGERING AND MANAGEMENT |
| **First Named Inventor/Applicant Name:** | Lawrence Kates |
| **Filer:** | David Anthony Morasch/Kenneth Linder |
| **Attorney Docket Number:** | 563800USCON11 |

Filed as Large Entity

**Filing Fees for Utility under 35 USC 111(a)**

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| **Extension-of-Time:** | | | | |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Miscellaneous:** | | | | |
| Submission- Information Disclosure Stmt | 1806 | 1 | 180 | 180 |
| | | **Total in USD ($)** | | **180** |

| Electronic Acknowledgement Receipt | |
|---|---|
| **EFS ID:** | 28678837 |
| **Application Number:** | 15090973 |
| **International Application Number:** | |
| **Confirmation Number:** | 5338 |
| **Title of Invention:** | WIRELESS SENSOR UNIT COMMUNICATION TRIGGERING AND MANAGEMENT |
| **First Named Inventor/Applicant Name:** | Lawrence Kates |
| **Customer Number:** | 124746 |
| **Filer:** | David Anthony Morasch/Kenneth Linder |
| **Filer Authorized By:** | David Anthony Morasch |
| **Attorney Docket Number:** | 563800USCON11 |
| **Receipt Date:** | 20-MAR-2017 |
| **Filing Date:** | 05-APR-2016 |
| **Time Stamp:** | 15:14:40 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | yes |
| Payment Type | CARD |
| Payment was successfully received in RAM | $180 |
| RAM confirmation Number | 032117INTEFSW15161200 |
| Deposit Account | |
| Authorized User | |
| The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: | |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | | 563800USCON11_IDS.pdf | 179687<br>f1fab8fafc6cfc8deff4b622262399a7d86ae862 | yes | 3 |
| | **Multipart Description/PDF files in .zip description** | | | | |
| | **Document Description** | | **Start** | **End** | |
| | Transmittal Letter | | 1 | 1 | |
| | Information Disclosure Statement (IDS) Form (SB08) | | 2 | 3 | |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | Non Patent Literature | 14534848FOA012617.pdf | 333943<br>7d9386b77bd15f512e803f6db93fa108bd20bc41 | no | 10 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 3 | Non Patent Literature | 15161880FOA122016.pdf | 440803<br>d483369e5e49e67ee5c98b112efeb629fbdab329 | no | 12 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 4 | Fee Worksheet (SB06) | fee-info.pdf | 30741<br>60662d5eebf5db96d6c1d8ffc53f821b038b3798 | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | **Total Files Size (in bytes):** | 985174 | | |

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

| | | | |
|---|---|---|---|
| Applicant: | Lawrence Kates | Examiner: | Ojiako K. Nwugo |
| Serial No.: | 15/090,973 | Group Art Unit: | 2685 |
| Filed: | April 5, 2016 | Docket: | 563800USCON11 |
| Title: | Wireless Sensor Unit Communication Triggering and Management | | |

## SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

In compliance with the duty imposed by 37 C.F.R. § 1.56, and in accordance with 37 C.F.R. §§ 1.97 *et. seq*., the referenced materials are brought to the attention of the Examiner for consideration in connection with the above-identified patent application. Applicants respectfully request that this Supplemental Information Disclosure Statement be entered and the documents listed on the attached Form 1449 be considered by the Examiner and made of record. Pursuant to the provisions of MPEP 609, Applicants request that a copy of the 1449 form, initialed as being considered by the Examiner, be returned to the Applicants with the next official communication.

Pursuant to 37 C.F.R. § 1.97(e)(2), Applicant states that no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of the information disclosure statement.

Pursuant to 37 C.F.R. § 1.97(c)(2), Applicants have included the fee of $180.00 as set forth in 37 C.F.R. § 1.17(p). Please charge any additional fees or credit any overpayment to Deposit Account No. 50-4143.

Respectfully submitted,

Lawrence Kates

By their Representatives,

Date March 20, 2017 By /Matthew Johnson/
Matthew Johnson
Reg. No. 72,299

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /O.K.N/

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | **Application Number** | 15/090,973 |
| | **Filing Date** | Apr 5, 2016 |
| | **First Named Inventor** | Lawrence Kates |
| | **Art Unit** | 2685 |
| | **Examiner Name** | Ojiako K. Nwugo |
| | **Attorney Docket Number** | 563800USCON11 |

| U.S. PATENTS | | | |
|---|---|---|---|
| Examiner Initial* | Patent Number | Issue Date | Patentee or Applicant |
| | US-4918690 | Apr 17, 1990 | Markkula, Jr, Armas C., et al. |
| | US-5428964 | Jul 4, 1995 | Lobdell, Vincent G. |
| | | | |
| **U.S. PATENT APPLICATION PUBLICATIONS** | | | |
| Examiner Initial* | Publication Number | Publication Date | Patentee or Applicant |
| | US-20020012323 | Jan 31, 2002 | Petite, Thomas D., et al. |
| | US-20080059622 | Mar 6, 2008 | Hite, Thomas D., et al. |
| | | | |
| **NON-PATENT LITERATURE DOCUMENTS** | | | |
| Examiner Initials* | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | | |
| | "Final Office Action", Application Number 14/534,848, 01/26/2017, 10 pages | | |
| | "Final Office Action", Application Number 15/161,880, 12/20/2016, 12 pages | | |

| EXAMINER SIGNATURE | | | |
|---|---|---|---|
| Examiner Signature | /OJIAKO K NWUGO/ | Date Considered | 04/04/2017 |

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /O.K.N/

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | **Application Number** | 15/090,973 |
| | **Filing Date** | Apr 5, 2016 |
| | **First Named Inventor** | Lawrence Kates |
| | **Art Unit** | 2685 |
| | **Examiner Name** | Ojiako K. Nwugo |
| | **Attorney Docket Number** | 563800USCON11 |

| NON-PATENT LITERATURE DOCUMENTS | | | |
|---|---|---|---|
| Examiner Initials* | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | | |
| | "Final Office Action", Application Number 15/161,880, 03/20/2017, 13 pages | | |
| | "Non-Final Office Action", Application Number 14/536,108, 05/04/2017, 17 pages | | |
| **EXAMINER SIGNATURE** | | | |
| Examiner Signature | | Date Considered | |
| *EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant. | | | |

# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | 15090973 |
| **Filing Date:** | 05-Apr-2016 |
| **Title of Invention:** | WIRELESS SENSOR UNIT COMMUNICATION TRIGGERING AND MANAGEMENT |
| **First Named Inventor/Applicant Name:** | Lawrence Kates |
| **Filer:** | David Anthony Morasch/Kenneth Linder |
| **Attorney Docket Number:** | 563800USCON11 |

Filed as Large Entity

**Filing Fees for Utility under 35 USC 111(a)**

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| **Extension-of-Time:** | | | | |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Miscellaneous:** | | | | |
| Submission- Information Disclosure Stmt | 1806 | 1 | 180 | 180 |
| | | **Total in USD ($)** | | **180** |

| Electronic Acknowledgement Receipt | |
|---|---|
| **EFS ID:** | 29469073 |
| **Application Number:** | 15090973 |
| **International Application Number:** | |
| **Confirmation Number:** | 5338 |
| **Title of Invention:** | WIRELESS SENSOR UNIT COMMUNICATION TRIGGERING AND MANAGEMENT |
| **First Named Inventor/Applicant Name:** | Lawrence Kates |
| **Customer Number:** | 124746 |
| **Filer:** | David Anthony Morasch/Kenneth Linder |
| **Filer Authorized By:** | David Anthony Morasch |
| **Attorney Docket Number:** | 563800USCON11 |
| **Receipt Date:** | 12-JUN-2017 |
| **Filing Date:** | 05-APR-2016 |
| **Time Stamp:** | 17:04:22 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | yes |
| Payment Type | CARD |
| Payment was successfully received in RAM | $180 |
| RAM confirmation Number | 061317INTEFSW17052100 |
| Deposit Account | |
| Authorized User | |
| The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: | |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | | 563800USCON11_IDS.pdf | 178450<br>70fbea7af63aa3256b6e50d16aaf8ad8617f5d14 | yes | 3 |
| | **Multipart Description/PDF files in .zip description** | | | | |
| | **Document Description** | | **Start** | **End** | |
| | Transmittal Letter | | 1 | 2 | |
| | Information Disclosure Statement (IDS) Form (SB08) | | 3 | 3 | |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | Non Patent Literature | 14536108NFOA050417.pdf | 605009<br>edc86536f1111a35df3f04a467c0843d28c6ce34 | no | 17 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 3 | Non Patent Literature | 15161880FOA032017.pdf | 449935<br>359c7bd4ef790f1db22a3b0f9dd961b6a4cc0f19 | no | 13 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 4 | Fee Worksheet (SB06) | fee-info.pdf | 30733<br>870f9c3e648099196772f2dc8f5493e85f7f0dda | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | **Total Files Size (in bytes):** | 1264127 | | |

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

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**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

| | | | |
|---|---|---|---|
| Applicant: | Lawrence Kates | Examiner: | Ojiako K. Nwugo |
| Serial No.: | 15/090,973 | Group Art Unit: | 2685 |
| Filed: | April 5, 2016 | Docket: | 563800USCON11 |
| Title: | Wireless Sensor Unit Communication Triggering and Management | | |

## SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

In compliance with the duty imposed by 37 C.F.R. § 1.56, and in accordance with 37 C.F.R. §§ 1.97 *et. seq*., the referenced materials are brought to the attention of the Examiner for consideration in connection with the above-identified patent application. Applicants respectfully request that this Supplemental Information Disclosure Statement be entered and the documents listed on the attached Form 1449 be considered by the Examiner and made of record. Pursuant to the provisions of MPEP 609, Applicants request that a copy of the 1449 form, initialed as being considered by the Examiner, be returned to the Applicants with the next official communication.

Pursuant to 37 C.F.R. § 1.97(e)(2), Applicant states that no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of the information disclosure statement.

Pursuant to 37 C.F.R. § 1.97(c)(2), Applicants have included the fee of $180.00 as set forth in 37 C.F.R. § 1.17(p). Please charge any additional fees or credit any overpayment to Deposit Account No. 50-4143.

Respectfully submitted,

Lawrence Kates

By their Representatives,

Date June 12, 2017 By /Patrick J. Walsh/

Patrick J. Walsh
Reg. No. 66,837

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

| **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** ( **Not for submission under 37 CFR 1.99)** | | |
|---|---|---|
| | Application Number | 15090973 |
| | Filing Date | 2016-04-05 |
| | First Named Inventor | Kates, Lawrence |
| | Art Unit | 2685 |
| | Examiner Name | Nwugo, Ojiako K. |
| | Attorney Docket Number | 563800USCON11 |

| **U.S.PATENTS** | | | | | | | Remove |
|---|---|---|---|---|---|---|---|
| Examiner Initial* | Cite No | Patent Number | Kind Code[1] | Issue Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear | |
| | 1 | | | | | | |
| If you wish to add additional U.S. Patent citation information please click the Add button. | | | | | | | Add |

| **U.S.PATENT APPLICATION PUBLICATIONS** | | | | | | | Remove |
|---|---|---|---|---|---|---|---|
| Examiner Initial* | Cite No | Publication Number | Kind Code[1] | Publication Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear | |
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| **FOREIGN PATENT DOCUMENTS** | | | | | | | | Remove |
|---|---|---|---|---|---|---|---|---|
| Examiner Initial* | Cite No | Foreign Document Number[3] | Country Code[2] i | Kind Code[4] | Publication Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear | T[5] |
| | 1 | | | | | | | |
| If you wish to add additional Foreign Patent Document citation information please click the Add button | | | | | | | | Add |

| **NON-PATENT LITERATURE DOCUMENTS** | | | Remove |
|---|---|---|---|
| Examiner Initials* | Cite No | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published. | T[5] |

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 15090973 |
| | Filing Date | 2016-04-05 |
| | First Named Inventor | Kates, Lawrence |
| | Art Unit | 2685 |
| | Examiner Name | Nwugo, Ojiako K. |
| | Attorney Docket Number | 563800USCON11 |

| | | |
|---|---|---|
| | 1 | "Non-Final Office Action", Application Number 14/534,848, 06/13/2017, 11 pages |

If you wish to add additional non-patent literature document citation information please click the Add button Add

**EXAMINER SIGNATURE**

| Examiner Signature | | Date Considered | |
|---|---|---|---|

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 15090973 |
| | Filing Date | 2016-04-05 |
| | First Named Inventor | Kates, Lawrence |
| | Art Unit | 2685 |
| | Examiner Name | Nwugo, Ojiako K. |
| | Attorney Docket Number | 563800USCON11 |

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☒ See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| Signature | /Matthew Johnson/ | Date (YYYY-MM-DD) | 2017-06-16 |
|---|---|---|---|
| Name/Print | Matthew Johnson | Registration Number | 72299 |

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

## Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

| | | | |
|---|---|---|---|
| Applicant: | Kates, Lawrence | Examiner: | Nwugo, Ojiako K. |
| Serial No.: | 15/090,973 | Group Art Unit: | 2685 |
| Filed: | April 5, 2016 | Docket: | 563800USCON11 |
| Title: | Wireless Sensor Unit Communication Triggering and Management | | |

## SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

In compliance with the duty imposed by 37 C.F.R. § 1.56, and in accordance with 37 C.F.R. §§ 1.97 *et. seq.*, the referenced materials are brought to the attention of the Examiner for consideration in connection with the above-identified patent application. Applicants respectfully request that this Supplemental Information Disclosure Statement be entered and the documents listed on the attached Form 1449 be considered by the Examiner and made of record. Pursuant to the provisions of MPEP 609, Applicants request that a copy of the 1449 form, initialed as being considered by the Examiner, be returned to the Applicants with the next official communication.

Pursuant to 37 C.F.R. § 1.97(e)(2), Applicant states that no item of information contained in the the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign aplication, and, to the knowledge of the person sigining the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any indiviudal designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of the information disclosure statement.

Pursuant to 37 C.F.R. § 1.97(c)(2), Applicants have included the fee of $180.00 as set forth in 37 C.F.R. § 1.17(p).

Respectfully submitted,

Lawrence Kates

By their Representatives,

Date June 16, 2017 By /Matthew Johnson/
Matthew Johnson
Reg. No. 72,299

# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | 15090973 |
| **Filing Date:** | 05-Apr-2016 |
| **Title of Invention:** | WIRELESS SENSOR UNIT COMMUNICATION TRIGGERING AND MANAGEMENT |
| **First Named Inventor/Applicant Name:** | Lawrence Kates |
| **Filer:** | Michael K. Colby |
| **Attorney Docket Number:** | 563800USCON11 |

Filed as Large Entity

**Filing Fees for Utility under 35 USC 111(a)**

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| **Extension-of-Time:** | | | | |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Miscellaneous:** | | | | |
| Submission- Information Disclosure Stmt | 1806 | 1 | 180 | 180 |
| | | **Total in USD ($)** | | **180** |

| Electronic Acknowledgement Receipt | |
|---|---|
| **EFS ID:** | 29526133 |
| **Application Number:** | 15090973 |
| **International Application Number:** | |
| **Confirmation Number:** | 5338 |
| **Title of Invention:** | WIRELESS SENSOR UNIT COMMUNICATION TRIGGERING AND MANAGEMENT |
| **First Named Inventor/Applicant Name:** | Lawrence Kates |
| **Customer Number:** | 124746 |
| **Filer:** | Michael K. Colby |
| **Filer Authorized By:** | |
| **Attorney Docket Number:** | 563800USCON11 |
| **Receipt Date:** | 16-JUN-2017 |
| **Filing Date:** | 05-APR-2016 |
| **Time Stamp:** | 16:48:04 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | yes |
| Payment Type | CARD |
| Payment was successfully received in RAM | $180 |
| RAM confirmation Number | 061917INTEFSW16520200 |
| Deposit Account | |
| Authorized User | |
| The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: | |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Other Reference-Patent/App/Search documents | 14534848NFOA061317.pdf | 394312<br>488297121f4292e3e64757e5fce2b02975309726 | no | 11 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | Information Disclosure Statement (IDS) Form (SB08) | GP-5638-00-US-CON11_SupplementalIDS892.pdf | 611955<br>df889e85a069bda3ca27bef1e71779253e178049 | no | 4 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| A U.S. Patent Number Citation or a U.S. Publication Number Citation is required in the Information Disclosure Statement (IDS) form for autoloading of data into USPTO systems. You may remove the form to add the required data in order to correct the Informational Message if you are citing U.S. References. If you chose not to include U.S. References, the image of the form will be processed and be made available within the Image File Wrapper (IFW) system. However, no data will be extracted from this form. Any additional data such as Foreign Patent Documents or Non Patent Literature will be manually reviewed and keyed into USPTO systems. | | | | | |
| 3 | Transmittal Letter | GP-5638-00-US-CON11_SupplementalIDS.pdf | 68099<br>15b45e0c8e967020186ddec9a124dd9aba41e475 | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 4 | Fee Worksheet (SB06) | fee-info.pdf | 30676<br>f69f662cc8a71f634b606f7f0b7bb580f36a19ae | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | **Total Files Size (in bytes):** | 1105042 | | |

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

## PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail** **Mail Stop ISSUE FEE**
**Commissioner for Patents**
**P.O. Box 1450**
**Alexandria, Virginia 22313-1450**
**or Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

124746 7590 03/16/2017
Wolfe-SBMC
116 W. Pacific Avenue
Suite 300
Spokane, WA 99201

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

**Certificate of Mailing or Transmission**
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

| |
|---|
| (Depositor's name) |
| Filed via EFS website (Signature) |
| (Date) |

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 15/090,973 | 04/05/2016 | Lawrence Kates | 563800USCON11 | 5338 |

TITLE OF INVENTION: WIRELESS SENSOR UNIT COMMUNICATION TRIGGERING AND MANAGEMENT

| APPLN. TYPE | ENTITY STATUS | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|---|---|---|---|---|---|---|
| nonprovisional | UNDISCOUNTED | $960 | $0 | $0 | $960 | 06/16/2017 |

| EXAMINER | ART UNIT | CLASS-SUBCLASS |
|---|---|---|
| NWUGO, OJIAKO K | 2685 | 340-870390 |

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: Google Inc.
(B) RESIDENCE: (CITY and STATE OR COUNTRY): Mountain View, California

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:
- ☒ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
- ☐ A check is enclosed.
- ☒ Payment by credit card. Form PTO-2038 is attached.
- ☐ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
- ☐ Applicant certifying micro entity status. See 37 CFR 1.29
  NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
- ☐ Applicant asserting small entity status. See 37 CFR 1.27
  NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
- ☒ Applicant changing to regular undiscounted fee status.
  NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /Matthew Johnson/ Date June 16, 2017
Typed or printed name Matthew Johnson Registration No. 72,299

# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | 15090973 |
| **Filing Date:** | 05-Apr-2016 |
| **Title of Invention:** | WIRELESS SENSOR UNIT COMMUNICATION TRIGGERING AND MANAGEMENT |
| **First Named Inventor/Applicant Name:** | Lawrence Kates |
| **Filer:** | Michael K. Colby/Todd Richards |
| **Attorney Docket Number:** | 563800USCON11 |

Filed as Large Entity

**Filing Fees for Utility under 35 USC 111(a)**

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| UTILITY APPL ISSUE FEE | 1501 | 1 | 960 | 960 |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Extension-of-Time:** | | | | |
| **Miscellaneous:** | | | | |
| | | **Total in USD ($)** | | **960** |

| Electronic Acknowledgement Receipt | |
|---|---|
| **EFS ID:** | 29525882 |
| **Application Number:** | 15090973 |
| **International Application Number:** | |
| **Confirmation Number:** | 5338 |
| **Title of Invention:** | WIRELESS SENSOR UNIT COMMUNICATION TRIGGERING AND MANAGEMENT |
| **First Named Inventor/Applicant Name:** | Lawrence Kates |
| **Customer Number:** | 124746 |
| **Filer:** | Michael K. Colby/Todd Richards |
| **Filer Authorized By:** | Michael K. Colby |
| **Attorney Docket Number:** | 563800USCON11 |
| **Receipt Date:** | 16-JUN-2017 |
| **Filing Date:** | 05-APR-2016 |
| **Time Stamp:** | 17:14:22 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | yes |
| Payment Type | CARD |
| Payment was successfully received in RAM | $960 |
| RAM confirmation Number | 061917INTEFSW17173901 |
| Deposit Account | |
| Authorized User | |
| The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: | |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Issue Fee Payment (PTO-85B) | 563800USCON11_Issue_Fee_Transmittal.pdf | 192327<br>ca94fb1e0031ff7c9c89246c29c76981be27239d | no | 1 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | Fee Worksheet (SB06) | fee-info.pdf | 30702<br>36dcc1747d53adab60878734034d9dcc0fb3eb43 | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | **Total Files Size (in bytes):** | 223029 | | |

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**
**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**
**National Stage of an International Application under 35 U.S.C. 371**
**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**
**New International Application Filed with the USPTO as a Receiving Office**
**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE


# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 15090973 |
| Filing Date | 2016-04-05 |
| First Named Inventor | Kates, Lawrence |
| Art Unit | 2685 |
| Examiner Name | Nwugo, Ojiako K. |
| Attorney Docket Number | 563800USCON11 |

**U.S.PATENTS** Remove

| Examiner Initial* | Cite No | Patent Number | Kind Code[1] | Issue Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|---|---|---|---|---|---|---|
| | 1 | | | | | |

If you wish to add additional U.S. Patent citation information please click the Add button. Add

**U.S.PATENT APPLICATION PUBLICATIONS** Remove

| Examiner Initial* | Cite No | Publication Number | Kind Code[1] | Publication Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|---|---|---|---|---|---|---|
| | 1 | | | | | |

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

**FOREIGN PATENT DOCUMENTS** Remove

| Examiner Initial* | Cite No | Foreign Document Number[3] | Country Code[2] i | Kind Code[4] | Publication Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear | T[5] |
|---|---|---|---|---|---|---|---|---|
| | 1 | | | | | | | |

If you wish to add additional Foreign Patent Document citation information please click the Add button Add

**NON-PATENT LITERATURE DOCUMENTS** Remove

| Examiner Initials* | Cite No | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published. | T[5] |
|---|---|---|---|



ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /O.K.N/

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 15090973 |
| | Filing Date | 2016-04-05 |
| | First Named Inventor | Kates, Lawrence |
| | Art Unit | 2685 |
| | Examiner Name | Nwugo, Ojiako K. |
| | Attorney Docket Number | 563800USCON11 |

| | | |
|---|---|---|
| | 1 | "Non-Final Office Action", Application Number 14/534,848, 06/13/2017, 11 pages |

If you wish to add additional non-patent literature document citation information please click the Add button Add

**EXAMINER SIGNATURE**

| Examiner Signature | /OJIAKO K NWUGO/ | Date Considered | 06/27/2017 |
|---|---|---|---|

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.



ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /O.K.N/

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 15090973 |
| Filing Date | 2016-04-05 |
| First Named Inventor | Kates, Lawrence |
| Art Unit | 2685 |
| Examiner Name | Nwugo, Ojiako K. |
| Attorney Docket Number | 563800USCON11 |

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☒ See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| | | | |
|---|---|---|---|
| Signature | /Matthew Johnson/ | Date (YYYY-MM-DD) | 2017-06-16 |
| Name/Print | Matthew Johnson | Registration Number | 72299 |

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**



ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /O.K.N/

## Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.



ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /O.K.N/

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | **Application Number** | 15/090,973 |
| | **Filing Date** | Apr 5, 2016 |
| | **First Named Inventor** | Lawrence Kates |
| | **Art Unit** | 2685 |
| | **Examiner Name** | Ojiako K. Nwugo |
| | **Attorney Docket Number** | 563800USCON11 |

| NON-PATENT LITERATURE DOCUMENTS | |
|---|---|
| Examiner Initials* | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. |
| | "Final Office Action", Application Number 15/161,880, 03/20/2017, 13 pages |
| | "Non-Final Office Action", Application Number 14/536,108, 05/04/2017, 17 pages |

| EXAMINER SIGNATURE | | | |
|---|---|---|---|
| Examiner Signature | /OJIAKO K NWUGO/ | Date Considered | 06/27/2017 |

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /O.K.N/

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | **Application Number** | 15/090,973 |
| | **Filing Date** | Apr 5, 2016 |
| | **First Named Inventor** | Lawrence Kates |
| | **Art Unit** | 2686 |
| | **Examiner Name** | Unknown |
| | **Attorney Docket Number** | 563800USCON11 |

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Change(s) applied to document, /M.H.E./ 3/29/2017

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /O.K.N/

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | **Application Number** | 15/090,973 |
| | **Filing Date** | Apr 5, 2016 |
| | **First Named Inventor** | Lawrence Kates |
| | **Art Unit** | 2686 |
| | **Examiner Name** | Unknown |
| | **Attorney Docket Number** | 563800USCON11 |

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Change(s) applied to document, /M.H.E./ 3/29/2017

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /O.K.N/

Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82A (07-13)
Approved for use through 11/30/2014. OMB 0651-0051
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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# TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

| | |
|---|---|
| Application Number | 15/090,973 |
| Filing Date | April 5, 2016 |
| First Named Inventor | Lawrence Kates |
| Title | Wireless Sensor Unit Communication Triggering and Management |
| Art Unit | 2685 |
| Examiner Name | Ojiako K. Nwugo |
| Attorney Docket Number | 563800USCON11 |

**SIGNATURE of Applicant or Patent Practitioner**

| | | | |
|---|---|---|---|
| Signature | /Matthew Johnson/ | Date (Optional) | July 10, 2017 |
| Name | Matthew Johnson | Registration Number | 72299 |
| Title (if Applicant is a juristic entity) | Attorney of Record | | |
| Applicant Name (if Applicant is a juristic entity) | Google Inc. | | |

**NOTE:** This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

☑ *Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82B (07-13)
Approved for use through 01/31/2018. OMB 0651-0035
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# POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

| Application Number | Filing Date |
|---|---|
| | |

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☑ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above: 149118

**OR**

☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

**Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:**

☑ The address associated with the above-mentioned Customer Number

**OR**

☐ The address associated with Customer Number:

**OR**

| | | | | | |
|---|---|---|---|---|---|
| ☐ Firm or Individual Name | | | | | |
| Address | | | | | |
| City | | State | | Zip | |
| Country | | | | | |
| Telephone | | Email | | | |

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

Google Inc.

☐ Inventor or Joint Inventor (title not required below)

☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)

☑ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)

☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

**SIGNATURE of Applicant for Patent**

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

| | | | |
|---|---|---|---|
| Signature | | Date (Optional) | |
| Name | Allen Lo | | |
| Title | Deputy General Counsel & Assistant Secretary of Google Inc. | | |

**NOTE:** Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ Total of forms are submitted.

# Electronic Acknowledgement Receipt

| | |
|---|---|
| **EFS ID:** | 29734530 |
| **Application Number:** | 15090973 |
| **International Application Number:** | |
| **Confirmation Number:** | 5338 |
| **Title of Invention:** | WIRELESS SENSOR UNIT COMMUNICATION TRIGGERING AND MANAGEMENT |
| **First Named Inventor/Applicant Name:** | Lawrence Kates |
| **Customer Number:** | 124746 |
| **Filer:** | Michael K. Colby/Todd Richards |
| **Filer Authorized By:** | Michael K. Colby |
| **Attorney Docket Number:** | 563800USCON11 |
| **Receipt Date:** | 10-JUL-2017 |
| **Filing Date:** | 05-APR-2016 |
| **Time Stamp:** | 15:49:54 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | no |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Power of Attorney | GP-5638-00-US-CON11_POA.pdf | 752890<br>304f4a57cd176b60cbfb08369a8e6b6bcefe9976 | no | 2 |

**Warnings:**

| The page size in the PDF is too large. The pages should be 8.5 x 11 or A4. If this PDF is submitted, the pages will be resized upon entry into the Image File Wrapper and may affect subsequent processing | |
|---|---|
| **Information:** | |
| **Total Files Size (in bytes):** | 752890 |

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|---|---|---|---|
| 15/090,973 | 04/05/2016 | Lawrence Kates | 563800USCON11 |

**CONFIRMATION NO. 5338**

124746
Wolfe-SBMC
116 W. Pacific Avenue
Suite 300
Spokane, WA 99201

**POWER OF ATTORNEY NOTICE**

*OC000000092708695*

Date Mailed: 07/12/2017

## NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/10/2017.

- The Power of Attorney to you in this application has been revoked by the applicant. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/kxaysana/

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|---|---|---|---|
| 15/090,973 | 04/05/2016 | Lawrence Kates | 563800USCON11 |

**CONFIRMATION NO. 5338**

149118
Colby Nipper / Google
291 East Shore Drive
Suite 200
Eagle, ID 83616

**POA ACCEPTANCE LETTER**

*OC000000092708722*

Date Mailed: 07/12/2017

## NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/10/2017.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/kxaysana/

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Address: COMMISSIONER FOR PATENTS
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Alexandria, Virginia 22313-1450
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| APPLICATION NO. | ISSUE DATE | PATENT NO. | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 15/090,973 | 08/01/2017 | 9723559 | 563800USCON11 | 5338 |

149118 7590 07/12/2017

Colby Nipper / Google
291 East Shore Drive
Suite 200
Eagle, ID 83616

# ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

**Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)**
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Lawrence Kates, Corona Del Mar, CA;
Google Inc., Mountain View, CA;